

HOPEX 5.0 Release Notes #CP4

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1. Overall architecture & deployment update

1.1. HOPEX Application Server (HAS)

HOPEX Application Server, shortly named "HAS", is based on a 3-tier web architecture principle including:

- <u>a presentation tier</u>: representing the web user interface. This layer is packaged as a **Front-end** module of web type. There might be several web front-end modules depending on the use case.
- <u>an application tier:</u> representing the business logic of the HOPEX platform. This layer is packaged as a **Back-end** module. The main module for the platform is called **HOPEX Core**.
- <u>a Data tier</u>: representing the persistence mechanisms of the data. This layer is provided by a market RDBMS.

As web application, the HOPEX solutions can be navigated using modern web browsers. The device used to browse the solutions depends on the Front-End module used and its compatibility with laptops, tablets, and mobiles.

The overall architecture of HAS is described in the following architecture view:







The elements of the application architecture can be deployed in various ways. The appropriate infrastructure depends on:

- 1. Pre-existing infrastructure: IIS servers or Database servers
- 2. Security constraints
- 3. Business continuity and disaster recovery plan, based on application business criticality.
- 4. Production, Pre-production, Training, or Development environments requirements.
- 5. Number of concurrent users.

The required infrastructure can go from a single server to a farm of servers.



Figure 2 HAS Infrastructure deployment overview

1.2. Technological Stack prerequisite



CAUTION:

For HOPEX V5, V5 CP1 the pre-requisite is .net Core 3.1

Starting from HOPEX V5 CP2 the pre-requisite is .net 6.0

1.1. MEGA HOPEX Store

MEGA HOPEX Store is the online website that allows to download all the required components to install and deploy the HOPEX solutions.

You will find on the MEGA HOPEX Store:

- 1. The Platform composed of modules
- 2. A set of complementary modules



To benefit from the best experience, when using HAS, we recommend you to allow access from the server to the <u>https://store.mega.com</u>.



Among the benefits of the MEGA HOPEX Store you will:

- Have clear visibility on updates, support policy and timeline
- Update your installation directly from the administration console.

HOPEX	HOPEX Appli	ication Server - Con	sole	HOPEX		HOPEX Application Ser	ver - Co	onsole		
Installation	Bundle H	OPEX 5.0.0+710 (5.0.0+710 ()	HOPEX VS.0 - 64 bits - Official)				Installed	Update (7)	Add new	Remove
HAS Settings Server updates	Manual update HAS Server update		is need to be performed with the instance manager and cennot be performed directly from the HAS Console.	Installation	Ŷ	Search here Q				do a manual upload. Install :
Maintenance Cluster Nodes	Name	Current Version	Newer Version	Module List	Ť	Туре			backup - EnvTestsLab	
Modules ^	HOPEX	5.0.0+710	5.1.0+713 This is a Short Term Support (STS) version please be caution when you update.	Module Settings Authentication		Site Web Service Hopex	Εð	HOPEX Database ba	ckup made with SQL Se	rver 2017 containing demo d
Cluster Monitoring	HOPEX	5.0.0+710	5.1.6 + 712 This is a Short Term Support (STS) version please be caution when you update.	Cluster Monitoring	^	Tags bopex backup	2	HOPEX GraphQL II A graphical interface	DE to test your GraphQL q	ueries
	HOPEX	5.0.0+710	5.1.9+711 This is a Short Term Support (STS) version please be caution when you update.			desktop web	Î	HOPEX Questionn		ompletely renovated and mo
	HOPEX	5.0.0+710	5.1.0+710 This is a Short Term Support (STS) version please be caution when you update.							ind drop functionalities, build

Visibility of platform update

Visibility of module update

2. HOPEX for the ArchiMate® Framework

2.1. ArchiMate 3.1 support and certification

The certification has been updated with ArchiMate 3.1 support; See the <u>ArchiMate tool</u> <u>register</u>

- New 'Value Stream' concept and 'Value Stream' Viewpoint
- Updated ArchiMate 3.1 Relationships
- ArchiMate 3.0 compatibility option to enable deprecated relationships
- 3.0 to 3.1 relationships conversion utility
- New "directed" type on Association & updated association line style in diagrams
- Import / export update to 3.1

2.2. UI/UX improvements

- The ArchiMate desktop is switched to 'public workspace' by default, to align with other products
- The ArchiMate desktop has been updated to the latest HOPEX UI/UX standards and look and feel
- ArchiMate has been integrated into the Unified 'Digital Transformation' desktop template to ease joint use with other HOPEX solutions
- Improvement of copy & paste and drag & drop behavior across ArchiMate models (a copy of the object is created)
- Cleanup of inventory objects properties
- New relationships matrix reporting / edition capability: Element x (relationship) x element editable relationship matrices
- Improvement of ArchiMate Open Exchange format import performance
- #CP3 Localization in German language
- #CP3 ArchiMate views can now be duplicated, and their diagrams compared using the standard comparison button in the diagram viewer
- #CP3 A new "capability & realizing applications" breakdown report template (based on tree set definition) is supplied, which uses the 'box in box' renderer; this enables to perform capability map analysis as in other HOPEX solutions.



hiMate - Capabilities &	Realizing Application	Components					¢ C
abilities & Application Compor	ients						
evels All • Show Applica	tion Component ×	~					
Software							
Development	d Human Resources	d Product Management	ef Product Strategy	Quality Assurance	aff Sales	d Services	af Support
Microsoft Azure DevOps	2 Salesforce	劉 Slack	HOPEX IT Business Management	Inicrosoft Azure DevOps	Salesforce	🖏 Microsoft Teams	Calesforce
			Microsoft Teams				

- #CP4 `Models Folders' are now available in the Models tree view, to ease the sorting when many ArchiMate Models are used
- #CP4 "Tags" menu is now available in the ArchiMate desktop

3. HOPEX Business Process Analysis

HOPEX BPA benefits from many improvements to ensure you can fully support process enhancement projects starting from Process Discovery to understand how your operations are really executed, Process Simulation to compare various transformation scenario, a modernized Process Modeling engine and new dashboarding capabilities to monitor the progress of your process initiatives.

3.1. UI/UX improvements

- The BPA desktop is switched to 'public workspace' by default, to align with other products
- The BPA desktop's hamburger Level 1 menu entries labels have been updated and simplified, using one word only whenever possible to obtain a lighter user interface



• The 'Business Processes' icons and diagram shapes color has been updated to a darker shade of blue so as to better separate from 'Organizational Processes'



HOPEX Business	Process Analysis 🔁 Recherc	her	•	Q ~
Home	e / Hierarchy View / Business Process Di	agram 🗲 Back		
•		×		
Home		Search Q	Ľ	\mathcal{C} « » Described object \uparrow \downarrow \mathbb{P} III \bigoplus \boxtimes < \mathbb{C} \mathbb{Q} \mathbb{Q}
C73	🛢 🗁 Business Processes			
Dashboard	HCM Sample Processes			
Capabilities	MEGA Process			
·\$1	MEGA Process BPMN			Participant Hiring Process
Processes	 Business Process-1 B Car Rental Business B 			
Simulation	HR Process Activities			Hiring Request
<u> </u>	Hiring Process			Hiring Process
Customer Jour	Business Proces	s 🖉 🗵 🗜 🖬		(Thing Treese
Projects	Application Interv	iew		
	🖬 🝙 🛛 Hiring Process 🛚			
	🖪 面 🛛 Manage HR Administr	ration and Payroll 🗈		+
	Manage Skills and Co	mpetences		
	🖪 🛐 🛛 Business Process Dia	gram		New Employee
	Master Financial Flows			L." B
	Procurement Business Pr			
	 Sell Products on the Inte SOX - Financial Cycles 10 	rnet 🖬		
	Travel and Vacation Busi	ness D		
- 25			-	

- The default diagram layout and participant orientation is switched to 'landscape' to better accommodate most common presentation choice
- The Diagram reorganization now allows reorganizing a diagram even if the described process is not on the diagram (it is then added automatically), thus enabling easy beautifying of imported external data (e.g., after third-party MS Visio or BPMN file import) while reducing the amount of manual rework of the diagram
- Silent creation of Pools when adding participant to a BPMN diagram, both in tabular entry and graphical entry, which eases addition, insertion, and modifications of participants within a process and contribute to the diagrams' maintenance workload reduction
- New "Intellibar" controls to insert new participants left / right or above / below a given participant
- The links re-assignment UI (User Interface) has been simplified: the "shift key" keyboard manipulation is no longer required, and links endpoints can be directly grabbed and reassigned
- Add / remove space robustness improvements
- The UI of the processes' properties "System Used" section has been updated with a newer look and feel using multi combo boxes; creation from properties is also re-activated.
- The improved assessment campaign creation wizard from HOPEX IRM is now available in the BPA desktop



Camp	aign Scope
S	Select parents and sub-elements $\mid ec{S}$ Expand the selected items
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	🗹 🗟 SOHO
	C 👗 Administration department
	🗖 🐨 📾 Media Library Flat Model D
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	C 🔒 Airline Community
	C 🔒 Airline Provider
	C 4 ArchiSurance
	B 🗋 🔒 Back Office

See the dedicated UX section for more details.

3.2. Message flows consistency tooling

Renewed message flow top-down consistency tooling (candidate queries, modeling rules, consistency check report)

- Ex-Ante tooling to help user create new consistent models:
 - Bottom-up: suggestion of candidate contents to be used when reusing an already described process
 - Top-down: initialization of called processes' description with incoming or outgoing message flows (as what was already available for sub processes)
- Ex-Post tooling to help user diagnose existing models' consistency:
 - Modeling rules notify the user when an inconsistent message is defined (e.g., incoming content for an operation with called process which does not appear in the process description below)
 - \circ $\;$ Identify errors thanks to a consistency check report.

3.3. New Syncfusion / BoldBI dashboards integration

On top of the platform functionality to embed BoldBI dashboards in HOPEX desktops (see platform section), new report data set definitions and guidelines are provided to enable building the following dashboarding widgets in HOPEX Business Process Analysis:

- Gauge of process description overall progress
- Line chart showing the number of new diagrams over time
- Bar chart of number of processes by risk level
- Tree maps



- Number of Risk per Processes
- Number of Applications per Processes
- Hierarchy of Processes
- Donut chart of level of automation
- Heatmap of process assessment



3.4. Process diagrams comparison

Processes' duplicates can be visually compared for an efficient gap analysis of new / modified / deleted items.

- Filter created / modified / deleted items highlighting
- Processes diagrams sequence flows differences are also highlighted
- Use slide, column, or vertical display mode



3.5. HOPEX Store Contents

New modules are now available from the V5 HOPEX Store

- The APQC modules grant access to industry specific as well as cross industry processes classifications
- One module is provided per industry to ease the installation
- Indicators are now available with each classification

	Platform Modules MEGA Community		Log
lters nd	(a spqc		×
Content pes AddOn blishers MEGA International	APC	APQC	APQC - Process Classification Framework - Automotive The Process Classification Framework (PCF) is a list of univeral business processes performed by every business, giving you a common language to communicate and define work processes
95 Business process analysis	APQC - Process Classification Framework -	APQC - Process Classification Framework -	across your organization. This is the industry specific framework for Automotive.
	Aerospace and Defense The Process Classification Framework (PCF) is a list of universal business processes performed by every business, giving you a commo language to communicate and define work processes	Airline The Process Classification Framework (PCF) is a list of universal business processes performed by every business, giving you a common language to communicate and define work processes	
	By MEGA International	By MEGA International	By MEGA International

• The ISO 9001:2015 module providing the ISO norm chapter to associate to processes is available on the V5 HOPEX Store

3.6. Process Portfolios

Process Portfolio has been refreshed and updated to newer User Interface HOPEX standards.

- The UI has been updated to hide 'initiatives' / portfolio lines intermediate objects and access processes directly
- The 'data call' platform feature has been instantiated for processes, enabling requesting users to fill in process properties; this is added as a new button on process portfolios.

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General V Characterisics Processes Assessment Reorganize III Instant Report	V Timeline of Reference Activity Fee X 1 selected	d
Local name 🕇	Priority	Strategic Alignment
Contract Negotiation	High	1 - Strategic
Hiring Process	Medium	2 - Critical
Purchase Goods & Services	Urgent	3 - High
		1 - Strategic 2 - Critical 3 - High 4 - Low 5 - Insignificant

3.7. #CP4 Reports refactoring

- The "process description" reports have been rewritten in java
- The following reports have been rewritten using HOPEX Report Studio, they will now be easier to duplicate and customize with the Studio low code capabilities
 - Organizational Process Catalog
 - Processes with Diagrams
 - Value Stream Catalog
- A new process tree set definition and associated report template 'Process Impact Graph' using the dendrogram renderer is available to help understanding the process context

3.8. Various improvements

- Simplification of standard profiles:
 - Intermediate profiles like 'Process Designer', 'Process Designer (basic)' are deactivated.
 - A conversion is provided to move the users' assignments to the 'Process Manager' profile instead.
- Organizational Process Excel import template improvement: help text, guidance (e.g., drop down lists), diagrams creation and sample data
- Process Assessment reports have been enhanced to take assessment organizational contexts into account
 - Process TIME report has been updated with an additional context parameter

- A new Process assessment heatmap report has been added to enable the differentiation of assessments, based on organizational context; the existing summary heatmap report remains available for a quick overview.
- BPA modeling rules have been enriched with BPMN export specific rules
 - These additional rules check various items which were causing errors when exporting in BPMN (e.g., objects in the diagram not owned by the process, objects owned by the process and not in the diagram, etc.)
 - The export wizard now proposes to select the tested modeling regulation, and displays the errors, if any.

BPMN2 Export - Processes Selection	
Consider Sub Processes as Called Processes	
Check BPMN Rules before export	
Modeling regulation	
Full BPMN Process Regulation	
BPMN Process Compliance for Export	
BPMN regulation	
Full BPMN Process Regulation	

- #CP4 Business Continuity Management menu has been added to the BPA desktop, so that the feature is available for the Process Manager profile when the BCM license is active
- #CP4 Controls are now available in the Organizational Process diagrams tabular entry

3.9. HOPEX Customer Journey

Customer Journey UI/UX improvements:

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- Addition of Capabilities to touchpoints, to support a Business Architecture use case for Customer Journey
- Simplification of tabular entry for touchpoints' resources, to focus on most common cases (e.g., Applications, Org-Units)
- Diagram graphical edition & auto-layout is enabled on top of tabular entry automated diagram
- Diagram Look and Feel update (updated shape set to ease automatic / manual diagramming transition)



3.10. HOPEX Risk Mapper

The new "Regulatory & Policy Frameworks" models from HOPEX Integrated Risk Management solution have been integrated in the HOPEX Risk Mapper product and HOPEX Business Process Analysis desktop.

- The former model is available via a compatibility option
- A conversion wizard is proposed to convert all / some of the former data into the new models.

Other:

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• Controls can now be displayed in Organizational Process diagrams, activating the "risk and controls" diagram view

3.11. HOPEX Process Simulation

The HOPEX Process Simulation option for HOPEX Business Process Analysis adds the quantitative analysis capabilities to the process description, to close the loop of continuous process improvement cycle

- Import process description and performance metrics from Process Mining tools
- Initialize simulation data (e.g., operations performing time and statistical distribution, use log as input distribution) based on Process Mining inputs
- Run what if simulation scenarios to assess improvement assumptions, and produce reports

3.11.1. New Process Simulation feature

A new "what if?" process simulation feature is made available on top of HOPEX Business Process Analysis.

• Process Analysts can set-up Simulation Scenarios on top of process models thanks to a dedicated wizard:



- Assumptions like Input flow and tasks performing time can be captured according to typical statistical distributions or reversed based on Process Mining results
- Resources schedule & quantity can be defined as part of a scenario
- \circ $\,$ Cost analysis can be performed based on resources hour cost or tasks fixed cost

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Q	TEST SIMU::TEST SIMU Fill Pizza Order (BPMN) [Organizational Process] Organizational Process Diagram	



- Standard simulation results computation and reports:
 - \circ $\,$ Computation of average performing time and cost for processes and tasks
 - \circ $\,$ Computation of resources utilization workload to help identify bottlenecks

HOPE) Busines	K ss Process Analysis ≠		① Q ~				÷۲	rð~ í	Autosaved	> 8	0 🗗
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	Deliver Order							6			
9	Prepare order	1							Deliver Order		

Standard reports are provided:

0

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- Simulation scenario overall results report
- Simulation scenario detailed results & process heatmap report
 - User selectable indicator (performing time, waiting time, cost, utilization)
 - \circ $\,$ Process diagram heatmap, with color coding for one indicator $\,$
 - $\circ~$ Tables with user friendly detailed figures presentation in "DD:HH:MM:SS" format



 Simulation load report: this report provides more insight on the overall or resource specific load over the simulation duration, leveraging on the simulation log output (mxml file)





- •
- Simulation scenarios comparison report
 - \circ tables with scenarios A/B comparison and process comparison heatmap
- Simulation scenario and mining import comparison report
- Note: the simulation engine is delivered as an HOPEX Store module

3.11.2. Process Mining Results Integration

Process Discovery

- Improved ability to import BPMN process description from Process Mining tools and beautify layout using auto layout
- Conversely, the standard BPMN export can be used to perform Process Conformance analysis in Process Mining tools

Process Analysis

- New feature to import a Process Mining "Process Map" snapshot
 - Process Map and associated frequency and duration metrics (as .xml file) can be imported on top of the standard BPMN import which enables the process discovery itself.
- New Process Mining results reports showing these Process Mining metrics as heatmap and tables.







- The process conformance report (derived from the generic comparison report, see above) allows comparing processes
 - Including processes based on mining import (free name-based comparison: no duplication links are required between the processes)
 - Providing a conformance index computation, based on transitions between process tasks





3.11.3. #CP4 Simulation feature improvements

- HOPEX IT Business Management "business functional areas" can now be used as resources in a simulation scenario
- Simulate with "infinite resources": a new option is available to override the resource definition from the model with a generic resource whose amount is set up to the highest possible value. This enables simulating the process regardless of the resources constraint to evaluate the best possible throughput time.
- Simulate process levels beyond level 2: this new option enables the process levels beyond level 2 (e.g. when a subprocess or called process breakdowns into its own subprocesses). The 'tasks' page then switches to a tree view enabling to easily reach the simulation data for the lower-level tasks.

4. HOPEX DoDAF

4.1. Desktop

DoDAF desktop was improved to provide better user Interface and menu access to DoDAF viewpoints.



The user workspace is now changed to public mode. This means when the user closes an HOPEX session, he/she is prompted to choose whether to change his/her last workspace modifications.



4.2. AV1 Improvement

Properties are added in different sections to describe the AV1 Overview and Summary Information viewpoint.



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A sample report is available to show all the Architecture textual properties description of the AV1 viewpoint:

My Reports ♥ ● New	• DoDAF 2.02 - AV-1 X	2
Local name 1	DoDAF 2.02 - AV-1 - Overview and Summary Information	С і
DEDAT 2.02 AV 1 OVER B .	This is the Defense Enterprise comment section	
	A Defense Enterprise	
	Architecture Project Identification	
	Defense Enterprise	
	Completion Calendar Date: 5/22/2021	
	Release Calendar Date: 8/14/2021	
	Effective Start Calendar Date: 1/14/2021	
	Effective End Calendar Date: 1/30/2021	
	Completion Status: Draft	
	This is Defense Enterprise comment section	
	Architecture Constraint Summary: This a text of Architecture Constraint Summary to define	
	Scope: Architecture View(s) and Products Identification	
	Description of the Architecture Scope	
	Temporal Scope: Not Specified	
	DoDAF 2.0 Architecture View Type: [Add: DoDAF 2.0 Architecture View Type]	
	Purpose and ViewPoint	
	This is the text of the Architecture Purpose	
	Architecture Objective Summary: This is the Architecture Objective Summary text	
≪ < Page 1 of 1 > ≫ ♂	Context	

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5. HOPEX Information Architecture

Information is a critical organizational asset and an essential resource for all business and IT leaders. It enables smarter decisions, provides the basis for new services and experiences for customers.

With HOPEX Information Architecture, you can build & design your Information, reverse and map your technical Data Assets, conduct Business Information Modeling with physical, logical & conceptual modeling, plan company's business information assets in accordance with your Information Strategy, automatically initialize and refine a single version of truth with your Business Glossary.



Since CP 3 improvements have been made to simplify the ergonomics and use of the product. A new glossary content search tool has been implemented to access definitions of business terms and their properties.

Also, the pictures and icons of conceptual objects have been improved.

5.1. Profiles

Profiles to connect and use HOPEX Information Architecture desktop have been simplified for easier administration.

Only the following products exist:

Data Architect

This profile enables access to all menus to define Business Glossary or to design data and database.

Old Profile(s)	Transformed to profile
Business Information Architect	
Database architect	Data Architect
Database Administrator	

Data Asset Manager

Data Asset Manager is no longer provided for Information Architecture Solution. It is only used in Data Governance Solution.

The existing assignment with this profile can not be done automatically by default. The use data used this profile in HOPEX Information Architecture Solution in V4 CP xx version and want now to use the V5 version, must decide starting the specific conversion of this profile on HOPEX Administration conversions panel.

Data Functional Administrator

IA Functional Administrator is renamed to Data Functional Administrator.

Old Profile(s)	Transformed to profile
IA Functional Administrator	Data Functional Administrator

A conversion process is available to transform profile assignation from old profile(s) to the Data Architect profile.

5.2. Renaming

See "*Renaming object type"* in Data Governance Chapter.

5.3. Desktop

HOPEX Information Architecture Desktop is improved and simplified for a better user experience.

We provide now direct links for the definition of terms, concepts, and related domains *(example below for the business glossary).*



To make business glossary easy to use, a new alphabetical navigation is provided to search term definitions and their usage context.

HOPEX Informatio	n Architecture	≓ Search	• Q ~	
Home	/ Glossary / Did	tionaries < 🗲 Back		
×	Initialize Busin	ness Dictionary		
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Home			Description	Synonyms
L d'S Dashboard	•	Flight		
9	•	Flight number		
Bold BI Dashb	•	Flight Number		
Glossary		FORTRAN		
A	E 🎚	Forword author		
Architecture		Foundation Architecture		
Reports		Framework		
ж		 Framework 	A structure for content or process that can be used as a tool to structure thinking, \ldots	
Tools	•	Friday		
	•	Friday		
		FTE		
		Functional Decomposition		
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Table property pages are improved to present columns, keys, indexes, and triggers in the same panel.

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Home	 Database Hierarchy Employees 0 Accounting Repository 	▲ Identification Name Data Categories Car Car		Data Owner(s)		
Bold BI Dashb Glossary	BA_Enterprise-VSI	Owner Database Car Rental >				
Architecture	Booking Car Rental	#Tags Data Group	>			
Reports	Car Refitation Relational Diagram Data Package	Description A rental car, owned by a World@Hand branch and rented to customers				
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☆	🖸 🖬 Model	✓ Attachments				
2 C	🖬 📄 Rental					

5.4. Business Glossary Search

A new glossary tool is provided to search for definitions of business terms and their properties. It is accessible from the tile directly from the home page.




It is possible to apply filters to reduce the search result.

Filters	4 booking
usiness dictionary	
Search	Socking
ata category Search	Travel agencies use the services of the major competence resorvations systems, also haven as global distributions systems (205), kindidig: Janadeus (255, Salten, G55, Salter, and Workston, which is a subdiary of Daveleyot, which alies for comparison and acting of total and fight rates with multiple comparise. [3] Sealtings made via travel agents, including online travel agents, may are be confirmed instartly. Unlike online travel agencies, meta sealtings and a single of the search in the search engines and sorting of total and fight rates with multiple comparise. [3] Sealtings in the view agents, including online travel agencies, may are be confirmed instartly. Unlike online travel agencies, meta and search engines and sorting of the view of the search engines and search engines are administerily agency and a search engines and search engines and search engines and search engines are administerily agency and a search engines and search engines are administerily agency and agency a
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Search	ð.
Travel	Abstract Booking
Customer	Booking may refer to:
Approved by Data Owner	Business Dictionary: Vication Booking Update: Honday
ata owner	
Search	Sooking Number
ata steward	The booking number is the identifier of the booking
Search	Business Dictionary: Vocation Business
usiness domain	
Search	Validated booking
	Business Dictionarys Waston Business Update: Jan 12, 2022

Select the adequate definition and visualize all other properties and descriptions

booking Tag : Travel X	Booking (Vacation Book	ing)				×
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Travel agencies use the services of the major computer reservations systems, also known as global distribution systems (GDS), including: Anadeus CRS, Galleo GDS, Safere, and Werldspan, which is a subsidiary of Travel port, which also for	A. NOURY Samir		ESAULE Sébastien ZAIDI Outsama			
mittor is a subsidiary on traveloit, which allow for comparison and sorting of hotel and flight rates with multiple comparies.[3] Bootings made via travel agents, including online travel agents, may or may not be confirmed instantly. Unlike online travel agencies, metasarch enginess and scraper sites, such as Skyscanner, Kaya ()	Worldspan, which is a subsidia online travel agents, may or m TripAdvisor, may or may not ha	ry of Travelport, which allo ay not be confirmed instan ave their own booking engin	iservations systems, also known as global distribution system w for comparison and sorting of hotel and flight rates with mult ty. Unlike online travel agencies, metasearch engines and scr e., and instead provide results for search queries and then di	tiple companies.[5] aper sites, such as f	Bookings made via travel ikyscanner, Kavak.com, R	agents, including (fires)
#Tags : Trave; Customer	booking.[6][7][8] Travel agent	s may also work with airlin	e consolidators.[9][10]			Concept
Business Dictionary: Vacation Booking Update: Today	Status: Approved by Di	ata Owner				
	Synonyms		Hyponyms	Hyper	nyms	
	Location gig Play date		Booking For Holidays Booking for Meeting	Abstra	rct Booking	
	Data Category		#Tags	Busin	ess Domain	
	Sensitive, Financial		Travel, Customer	Bookin	g Definition and Event, Bo	oking a travel package
	Related Properties					
	Name	Definition		Туре	Presence	Cardinality
	Booking Number	The booking nur	nber is the identifier of the booking	Concept	Always	1
	Customer	a person or organ	nization that buys goods or services from a store or business.	Concert	Always	

5.5. Improved Pictures

See "*Improved pictures"* in Data Governance Chapter.

5.6. HOPEX Data Extractor

HOPEX Data Extractor tool is renamed "**HOPEX Data Source Extractor**". This tool is now available both in 32 and in 64-bits version, to allow the use of 64-bits drivers and ODBC Data Sources.

HOPEX Data Source Extractor can be downloaded from HOPEX Store in the "Utilities tools" section.



Both tool versions, 32 and 64-bits, are available from GitHub.

The User Interface of the new versions are improved to help Data user to extract DBMS schema definition easily.

HOPEX Data Source Extractor - 🗆 X	HOPEX Data Source Extractor – 🗆 🗙
HOPEX Data Source Extractor enables Users to extract Data source metadata such as Tables, Columns, Keys, Indexes, Views, TriggersThe xml file of Data source metadata description can be imported in HOPEX Information Architecture Solution.	MEGA HOPEX Select a Data Source from the list, or use ODBC Data Source Administrator button to Add a new Data Source
SQL Server CRACLE Leradata. Image: Construction of the server of the se	Select Data Source : Name Driver GSC Data Source SQL Server Airport Financial Services SQL Server sql hadoop SQL Server Native Client 11.0
Other Data Source types	
Next →	ODBC Data Source Administrator ← back Next →

HOPEX Data Source Extractor				- 🗆 ×	HOP	EX Data Source Extractor				×
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Driver Name SC	OL Server			SOL Server		Driver	SQL Server		2	SOL Server
				SQL Server		Owner	[ALL]	ſ	Open Fi	
Options		Owner	[ALL]	7		Location File	C:\temp\tmp.xml	l	Open Fi	le
Tables		Location File	C:\temp\tmp.xml	Browse						^
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, ,	_	Preview				Data Source Extracting :				
Foreign Key										
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Show more		[TABLE][dbo] Cust				Table : dbo.Exchange_Ra Table : dbo.Monev Trans				
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Procedures		[TABLE][dbo] Purc [TABLE][dbo] Shop				Table : dbo.Tax refund Re Table : dbo.Transaction Table : dbo.Vendors	quest			
Triggers		[TABLE][dbo] sysd				Table : dbo.Withdrawal				
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Clusters		[TABLE][dbo] Vend								~
Physical Parameters		[TABLE][dbo] With				17 Objects Extracted.				
,		[TABLE][sys] trace				17 Objects Extracted.				_
ODBC Information		[TABLE][sys] trace	_xe_event_map				100%			
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The user can easily select Data sources from regular DBMS such as SQL Server, Oracle, DB2, Teradata, Postgres, MySQL and more.

Once connected to the data source, the user can choose among the options list which are the properties describing the metadata of the schema to be extracted.

The extraction file can be imported from HOPEX Information Architecture web desktop to create physical Data assets as tables, columns, keys...

MEGA

FIGHTE & - Step Discover provide the providence of the providence

6. HOPEX Data Governance

In the digital world we live in, managing data as a strategic asset is imperative to support business transformation and build innovative business models.

We introduce in HOPEX V5 a new HOPEX Data Governance solution to help Chief Data Officers and the Data Office to understand how data is captured, used and transformed.



The solution easily connects to multiple data sources thanks to data discovery and outof-the-box connectors to quickly build data repositories.

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Azure Analysis Services	Access	Amazon DynamoDB	HBase	Hive	Impala	Kafka	Azure Data Catalog	Azure Synapse	Azure Table
· ₽≥ I	A		HB	Len	4	%	5	6	
Cassandra	Cloudant	CockroachDB	confluence	Cosmos DB	Couchbase	CSV	IBM DB2	elasticsearch	Excel
Ø	0	ð	×	法	٢	.CSV	D82	-	x
Excel Online	FinancialForce	BigQuery	Google Data Catalog	Google Spanner	IBM Informix	Jira	JSON	MariaDB	MongoDB
×	G		0		Informix software	Ŷ	{JSON}	Maricola	•



HOPEX Data Governance supports all data stakeholder missions (data knowledge, quality, compliance...) and benefits from synergies with EA, BPM and GRC to understand how data is managed and exchanged between applications, how it is used in business processes and how to ensure data compliance leveraging HOPEX functionalities.



Figure 5 - HOPEX Chief Data Officer dashboard

HOPEX Data Governance includes all features of HOPEX Information Architecture plus many new modules and functionalities needed to perform Data Governance.



Figure 6 - HOPEX Data Governance functional coverage

6.1. Profiles

These profiles are available in HOPEX Data Governance:

Data Asset manager

This profile has access to these menus: Data Discovery, Data Catalog, Business Glossary, Data Assurance, Data Compliance, Data Reports & Dashboards, except administration functionalities.

Data Architect

This profile enables access to all menus to define Business Glossary or to design data and database.

Data Functional Administrator

This profile has full rights for managing all administrative tasks.

6.2. Renaming

The following object and Diagram types are renamed in HOPEX Data Governance

Renamed Object types

ious naming	New	naming
FR	EN	FR
Inventaire de métadonnée	Deployed Data Store	Dépôt de données déployé
Domaine de données métier	Concepts Domain	Domaine de concepts
Carte de domaine métier	Concept Domain Map	Carte des domaines de concepts
Domaine de données logique	Logical Data Domain	Domaine de données logique
Domaine de données applicatif	Data domain	Domaine de données
Domain Relationnel	Relational Schema	Schéma relationnel
Elément d'information	Concept Property	Propriété de concept
Composant d'Information de Concept	Concept Property Component	Composant de propriété de concept
Elément d'information de concept	Sub-Property	Sous-propriété
Elément d'information de concept calculé	Computed Sub-Property	Sous-propriété calculée
Règle d'élément d'information	Concept Property Rule	Règle de propriété de concept
Paramètre d'entrée d'élément d'information	Concept Property Input Parameter	Paramètre d'entrée de propriété de concept
Paramètre de règle d'élément d'information	Concept Property Rule Parameter	Paramètre de règle de propriété de concept
Paramètre de sortie de la règle d'élément d'information	Concept Property Rule Output Parameter	Paramètre de sortie de la règle de propriété de concept
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Renamed Diagram types

Previous	naming	New n	aming
EN	FR	EN	FR
Business Information Area Concept Diagram	Diagramme de concepts du domaine d'information métier	Concepts Domain Diagram	Diagramme du domaine des concepts



Figure 7 - Simple and direct feature access on user desktop and extended menus

Business Information Area Structure Diagram	Diagramme de structure de domaine d'informations métier	Concepts Domain Structure Diagram	Diagramme de structure de domaine des concepts
Data Area Entity Diagram	Diagramme de domaine de données	Data Domain Entity Diagram	Diagramme de domaine de données
Logical Data Area Diagram	Diagramme de domaine de données logiques	Logical Data Domain Diagram	Diagramme de domaine de données logiques

Figure 8 – Extended menus

6.3. Desktop

HOPEX Data Governance has a simple and easy to use desktop with shortcuts (tiles).



You can quickly perform Business Glossary, Data Assets, Data Catalog management works and Data Compliance to manage regulatory constraints, Directives, Controls and Data Quality Policies.

The following figure represents a big picture of functionalities and tools that can be accessible from menus

Carataga Carataga Glossary Architecture Compliance	Glossary Search Susiness Data Dictionaries Reports	Ar was a we figure	Reports Description Reports Word Cloud Reports Data Usage Reports Regulatory Reports Data Catalog Reports Other Reports Other Reports	Consultance Reports
Bold BI Dashb Catalogs Glossary Architecture Compliance	Inventory Data Source Snapshots Data Discovery Metadata Import ABA Data Catalog ABA Data Catalog-1 ABA Data Catalog-JsonTest160Tables ABA Catalog-sql_20220623 ABA Data Catalog-sql_2		Tests Entradiat Import Import Import Import Import Import Import Import Import Import Import Import	Collaboration Environment Collaboration Standard Navigation Environment EA Projects Administration EA Projects Administration Software Technologies Image: Collaboration Infrastructure Landscape Image: Collaboration Sites Image: Collaboration Image: Collaboration
Architecture Compliance	Compliance Regulatory Frameworks Policy Frameworks Data Quality Policies Operational Assurance	Image: Second system Collaboration Collaboration My Questionnaires Image: Second system My Review Notes Image: Second system Image: My Workflows Image: Second system Image: Second system Image: Second system <td< th=""><th>Tools</th><th>Assessment Preparation Campaigns Follow-up</th></td<>	Tools	Assessment Preparation Campaigns Follow-up

6.4. Business Glossary

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6.4.1. Glossary search

Business Glossary is available from business term search tool.

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Business Terms alphabetical tree in Glossary menu helps to navigate on term definitions and properties.

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6.5. Business Glossary Initialization

Discovered data assets as meta dataset, meta field, metadata inventory can be used to initialize Business Information and to build the Business Glossary.

In the Dictionaries sub menu of Glossary or from tools menu, you have access to "Initialize Business Dictionary" tool.

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Initialization tool enable to select the data sources objects that can be physical or logical.



The created business Information is made available in a new Business Dictionary, created from the selected metadata inventory. Data User can provide additional Term definition & Images to enrich each concept to build and share a Business Glossary.



Figure 8 - Created Business Dictionary with navigation links from meta datasets to concepts

6.6. Improved pictures

Pictures and icons of Business information are improved.



6.7. Data Architecture

MEGA

In addition to logical data (data dictionary, data domain, classes) ... and physical data (database, column tables...), the Data Architecture menu provides access to the inventories of systems (applications, application systems) and Processes.

The hierarchy view enables to navigate on objects from their containers.

A new navigation root, based on Data categories, helps the Data Asset Manager to access all the objects from a specific and same classification.



6.8. Data Catalog

MEGA

Data Catalog functionality is a central Data Governance tool to help all the Data Community members in Data understanding and managing regulatory compliance and data quality.

Chief Data Officers, Data steward, Data architect, Data scientist and all Data users to define and manage information on the data.

This data contained in Data sources as SQL databases, NoSQL databases or files, are metadata such as the structure, quality, definition and use of data are easily accessible for several data consumers.

One or more data catalogs can be created to manage specific metadata scopes for specific organizations, to achieve quantitative and qualitative goals and compliance purposes for targeted regulatory and Business policies.

A dedicated menu "Data Catalog" is available in the HOPEX Data Governance desktop. It enables access to Data Catalog inventory, Dashboard, Data Discovery tool, and metadata management.



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From #CP4 the Data Catalog hierarchy view displays managed Data sources grouped by their software technologies (Oracle, SQL Server, CSV, Postgres, MongoDB,)

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In this hierarchy view, the folder of "Sections of Regulatory Framework" is moved as panel in the property box of Data Catalog.



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After populating the data catalog via discovery and initializing the business objects, it is possible to specify the Responsible assignment (data owner) of these objects or their business dictionaries or the business domains that use them.

A new tool "Fill Data" is available from the inventory of business objects referenced by the Data Catalog.

This tool allows to create a session to ask all the managers of the selected objects to complete their definition, describe their properties, their quality policies, to manage regulatory compliance, and assess their quality for example.

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Data Asset Regulatory Subjects	This page allows you to consult and specify regul	
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Direct Assessment of Data Quality	This tool enables to assess directly Data Quality.	
<pre><< < Page 1 of 1 > >></pre>	C Show 50 ♦	Displaying 1 - 4 of
Advanced properties		

After Session creation new forms are sent to each Data Owner of selected object.

From Assessment menu, a new tile is added to access to these forms for each data responsible.

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6.9. Data Catalog Workflow

A workflow is available to follow the different states of preparation and updating of a Data Catalog. It can be instantiated by the Data Catalog owner and any person responsible assigned to it can participate on its progression.



Notifications will be sent to the various managers each time the Data Catalog status changes.

6.10. Data Discovery

Data Discovery allows any data user to retrieve metadata structure from several and different data sources. It offers several connectors for SQL, NoSQL, or files databases.

Data Discovery tool is provided as a module. New versions can be downloaded from the HOPEX Store.

The module can be used in 2 modes:

1. **Online mode**: with this mode, the user can use Data Discovery from HOPEX Data Governance Desktop and connect to targeted Data Source infrastructures

M E G A

without any restriction to discover metadata. If for some security reasons, it is not possible to access to a given infrastructure, it is recommended to download and use the Data Discovery tool in standalone mode.

 Standalone mode: the same Data Discovery tool can be downloaded from HOPEX Store and used autonomously to discover and generate a limited export metadata from data sources. This meta data structure export can be transmitted and then imported via the HOPEX Data Governance desktop.





6.10.1. Discovery Connectors

The user can choose first which data source type he/she would like to discover.

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The user can then enter Data source credentials to connect to the system.

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Once Data source is connected, the user can select the scope of metadata to import in HOPEX and select in which Data catalog metadata inventory it will be referenced. Beyond the metadata scope, he can also ask to import qualitative and quantitative indications on the data values.

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Metadata scope is first extracted from selected Data source and imported in HOPEX by creating objects to describe metadata information.

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customers		bikestores	100%
datatypes01		bikestores	100%
datatypes02		bikestores	100%
			HOME Page « Previous Close

After the metadata inventory import, the user can visualize all metadata objects and navigate to them to tag and classify them. The navigation can be done from a Data catalog or from Metadata inventory list.





6.10.2. Data Discovery standalone

From the #CP4 version, the import of Json file in HOPEX of discovered metadata description is scheduled as Job. At the end of the import, a notification and an email are sent to the Current User and Data Catalog owner.

6.11. Business Roles

New Business Role are added to manage and define responsibilities on Data Assets.

Business Role	Definition
Data Catalog Owner	The Data Catalog Owner is responsible for Data Catalog creation and related scope definition.
Data Catalog Consumer	The Data Catalog Consumer is a stakeholder consuming Data from the Data Catalog. He/She can collaborate with other managers in the Data Quality improvement process.
Data Manager	The Data Manager will map, organize and classify all company's data and information. He/She will have to set up a repository and make it understandable for everyone.

6.12. Metadata snapshot

Metadata snapshots help to retrieve quantitative and qualitative indicators of meta field values at specific time for each meta dataset and at specific time. Meta field snapshots are grouped by metadata inventory snapshot and meta dataset snapshot.

Quantitative indicators	Qualitative indicators
Number of rows in meta dataset	Number of unique values
Number of rows in meta field	Minimum values for integer meta field
Number of null	Maximum values for integer meta field
	Average values for integer meta field
	Number of distinct values



Data user can choose this information in Data Discovery tool at the selection scope step. User can visualize metadata snapshot from the menu in the desktop, by specifying the Data Catalog, the metadata inventory snapshot, the snapshot and specific time.

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Home	e / Catalogs / Data Catalog Inventory < 📔	- Back							
•	Inventory Data Source Snapshots								
	Data Catalog ABA Data Catalog		Deployed Data	Store		Snapshot date BikeStore_2022-06-2	3T16:11:25.121Z		
	• •								
rd		Number of Row	Number of Unique Values	Field Type	Number Completed Row	Number of Distinct Values	Number of null	Average Value	
	BikeStore_2022-06-23T16:11:25.1								
ihb	🖸 💁 brands	9							
	categories	7							
	customers	1445							
۲ - ا	🖺 city		4	VARCHAR	1445	195	0	0	
	customer_id		1445	INT IDENTITY	1445	1445	0	723	
	💁 email		1445	VARCHAR	1445	1445	0	0	
•	🍨 first_name		1098	VARCHAR	1445	1265	0	0	
	🐁 last_name		336	VARCHAR	1445	753	0	0	
	🐁 phone		178	VARCHAR	178	178	1267	0	
	🐁 state		0	VARCHAR	1445	3	0	0	
	5 street		1445	VARCHAR	1445	1445	0	0	
	zip_code		4	VARCHAR	1445	195	0	0	
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	🖸 🔩 order_items	4722							
		321							
	🖸 💁 staffs	10							
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6.13. Data Quality Policy

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HOPEX Data Governance enables to design Data Quality. This can be done by specifying Data Quality Policies, Data Quality dimension and quality thresholds.

Data Quality Policy describes how data should exist to be useful and usable within an organization. Data Quality Manager can define the inventory of Data Quality policies to describe its Data requirements, to specify Data assets affected and classify them by Data quality Dimensions.

Data Quality Dimension is a measurable feature or characteristic of Data. Data Quality Dimensions provide a vocabulary for defining data quality requirements.

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🛆 Home	Name 1	Description	Policy Subjects	Data Quality Dimension	Unit	Operator	Value				
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🔝 Bold BI Dashboard	Brands Validity		brands	Validity	%	>					
Catalogs											
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Architecture											
🖑 Compliance 🗸 🗸											
ው Regulatory Frameworks											
Policy Frameworks											
🙀 Data Quality Policies											
Operational Assurance											
Reports											
💥 Tools											

Data Quality Policies can be grouped and managed in policy framework.

They can be also classified by dimension and accessed from this axis.



Predefined Data Quality dimensions can be easily imported in the User interface by using the "Add predefined dimensions" button.

HOPEX ata Governance ₽ Select an of	bject type → Find object > Q →					← → → ∂ Autosave	• • • • • •
Home / Compliance / Policy Framework	ks < ← Back						
4 4	Data Quality Dimensions Policy Frameworks						
A Home	Add predefined dimensions						
🕝 Dashboard	E • New						
Bold BI Dashboard		Description	Policy Subjects	Treshold Operator	Value	Unit	Owner
Catalogs	Accessibility	Ease of access and use,				%	
	(i) Accuracy	The degree to which dat				%	
Glossary	(i) Completeness	The proportion of stored				%	
Architecture	R Accommodation Completeness		Accommodation	>	85	%	
🖉 Compliance 🗸 🗸	Confidence	Are Data Governance, D				96	
👜 Regulatory Frameworks	Consistency	The absence of differenc				96	
	Data Security	Data security covers the				%	
Data Quality Policies	Freshness	The freshness of the dat				Time	
Operational Assurance	Reasonability	Reasonability asks whet				96	
	Relevancy	Relevance of data refers				%	
Reports	Timeliness	The degree to which dat				Time	
💥 Tools	🖬 🛞 Traceability	Traceability makes it pos				%	
(d) Assessment	🖬 🛞 Uniqueness	No thing will be recorde				%	
🛱 Collaboration	🖬 🛞 Usability	Is the Data understanda				%	
ාමා Environment	🗖 🛞 Validity	Data are valid if it confor				96	
	🛱 Brands Validity		brands	>	90	%	
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న్లి Favorites							
() History							

6.13.1. Data Quality Assessment

Discovered Data assets (as meta dataset) can be assessed according to the standard Assessment Data Quality dimensions.

ta Governance	n object type 🔹 🖌 Find	object	> Q ~			•	hr rhr d	Autosaved 🕓	• 8 ?
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• •	ቾ 🔓 customers								
🛆 Home	General 🌱 Cha	aracteristics	Meta Fields Relati	ionships 🖌 Asse	Regulation:	s Data Quality	Reporting	Dashboard	Activity Feed
Dashboard	 Direct Assessme 	ent							
🖻 Bold BI Dashboard	+ Evaluate								٢
	Assessment No	o Assessor	Evaluation Date	Completeness	Uniqueness	Timeliness	Validity	Accuracy	Consistency
Glossary	Custome	NOURY Samir	5/18/2022	Low	Medium	High	Very High	High	High
Architecture	Custome	NOURY Samir	3/15/2021	Very Low	Low	Very Low	Medium	Medium	Low
Compliance	C Lustome	NOURY Samir	6/28/2022	Medium	High	Medium	Very High	Very High	High
Reports	Custome	NOURY Samir	1/19/2022	Low	Medium	Medium	High	Low	High
reports									
Assessment	<< < Page	1 of 1	> >> 🔁 Shov	v 50 🗘 element	ts				Displaying 1 - 4 of
Collaboration									
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국 Favorites	4 sanges Aglern D			- 2002/61/1		5/18/2022 -		628/2022 -	 Consistency Uniqueness Validity Accuracy Timeliness

6.14. Data Quality Excel Template

Speed up your Data Quality by bulk loading your existing Excel Data Quality dimension evaluations. This Excel Template is an add-on, that can be downloaded from the HOPEX Store. It provides means to import:

- Data Quality dimension values of: Completeness, Uniqueness, Timeliness, Validity, Consistency and Accuracy
- Data Quality dimension values for: conceptual, logical and physical data. For example, "Concept", "Class", "Table".



The Data Quality Excel Template can be deployed in HOPEX as Solution pack procedure.

This Excel Template is mapped to the Data Quality Assessment Template implemented in the direct Assessment tool of HOPEX Data Governance.

Below you can see an example for import of different quality values for a concept

Values are defined in the Excel file:

C4	4 🔹 :	$\times \checkmark f_x$								
1	A	В	С	D	E	F	G	н	1	J
1	Hopex Identifier	Object Type	Object name	Completeness	Uniqueness	Timeliness	Validity	Accuracy	Consistency	Assessor Name
2		Concept	Artifact	Very Low	Low	Medium	Very High	High	Medium	NOURY Sam
3				-112						
4				1						

And are imported into HOPEX Data Governance

nent 🗸								
ment								
	Assessor	Evaluation Date	Completeness	Uniqueness	Timeliness	Validity	Accuracy	Consistency
act (Concept)	NOURY Sam	8/21/2020	Very Low	Low	Medium	Very High	High	Medium
	act (Concept)	assment Node 1 Assessor	essment Node 1 Assessor Evaluation Date	essment Node 1 Assessor Evaluation Date Completeness	Assessor Evaluation Date Completeness Uniqueness	Assessor Evaluation Date Completeness Uniqueness Timeliness	Assessor Evaluation Date Completeness Uniqueness Timeliness Validity	Assessor Evaluation Date Completeness Uniqueness Timeliness Validity Accuracy

6.15. Data Lineage graphical improvement

Data lineage graphics and diagram shapes have been improved for better readability. These improvements relate to data lineage diagrams of business information, logical or physical data.

Participants as Organization and position type are displayed horizontally. Origin data and data subject are displayed in the border of Data lineage.

6.16. Unified Compliance Framework

HOPEX Data Governance provides an integration with the Unified Compliance Framework (UCF) library of compliance documents and controls.

Data user can import regulatory frameworks, controls and content enriched by UCF.

UCF helps to implement the appropriate controls for each regulation, while identifying controls shared by multiple regulatory documents. This allows companies to avoid duplicate efforts and to reduce time and cost associated with data compliance.

Policies and Rules menu is reorganized to display parts of Regulatory Framework, Business Policy Framework, Business Rules and UCF part: "Control Framework" that is a new submenu.

Home / Compliance / Regulatory F	rameworks < 🗲 Back						Ę
	Regulatory Frameworks By Control Directives						
A Home	Regulatory Frameworks represent authority documents issued by a governmental regulatory body. If you have a UCF license you can import regulatory content ready to use via the import wizard, otherwise you can manually create it via the Net and the second seco	w button.					
ට Dashboard	O New					1	0
😰 Bold BI Dashboard					Sea	rch	~
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- B Glossary	EU General Data Protection Regulation (GDPR)		,				
Architecture	Chapter II. Rights of the data subject		, ,				
-	Chapter IV. Controller and processor		5				
Compliance	Chapter V. Transfers of personal data to third countries or international organisations Chapter V. Transfers of personal data to third countries or international organisations		6				
	Chapter V. Honsers of personal data to third contribution of generations Chapter VIII. Remedies, liability and penalties		4				
Policy Frameworks	Chapter IX. Provisions relating to specific processing situations		4				
😭 Data Quality Policies	Art. 86. Processing and public access to official documents		1				
🔐 Operational Assurance	Art. 87. Processing of the national identification number		1				
Reports	Art. 87 § 1. Member States may further determine the specific conditions for the processing of a national identification numbe		0				
💥 Tools	🗖 🛅 Art. 88. Processing in the context of employment + 🗵 🖧 🗟 🗹 🗄		3				
Assessment	🗖 😰 🛛 Art. 88.1. Member States may, by law or by collective agreements, provide for more specific rules to ensure the protection of t		0				
	Document the organization's local environments.						
සී Collaboration	Establish, Implement, and maintain local environment security profiles.						
© Environment	🗖 👔 🛛 Art. 88.2. Those rules shall include suitable and specific measures to safeguard the data subject's human dignity, legitimate in		0				
Administration	Protect an individual's civil rights during personal data collection and personal data processing.						
∧ ↓ Favorites	🛚 🏟 🛛 Art. 88.3. Each Member State shall notify to the Commission those provisions of its law which it adopts pursuant to paragraph		0				
	🛛 🛅 🛛 Art. 89. Safeguards and derogations relating to processing for archiving purposes in the public interest, scientific or historical rese		4				
C History	Chanter X. Delenated acts and implementing acts		1				

The UCF Import tool is an option and is available for Data Functional Administrator profile that oversees the import of regulatory and control directive.

6.17. Regulatory and Data Categories

From CP3, it is possible to specify on each regulatory, section or article the list of constrained Data Categories.



This confirmation is recalled at the level of each datum. So it is very useful later to specify in detail the regulatory parts that concern this data.

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🖓 Dashboard	Prescribed Regulations				
Bold BI Dashboard	EU General Data Protection Regulation (GDPR)				
Catalogs					
📔 Glossary					
Architecture					
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Policy Frameworks					
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le Assessment					
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	The Policy Block list is not populated yet. To populate the list, click:				
	* Connect				
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6.18. Data Center



Data Center is a new concept defined to indicate where deployed Data Store is located and specified by "site" object. Data centers are used to build an Enterprise Infrastructure landscape.

HOPEX Data Governance ₽ Select an ob	oject type 🔹 Find object 🔅 🗙 🔍 🗸			\leftarrow	🞜 Autosaved 🛈 🐥	8 D 🗗
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_	BiteStore		Australia		📓 ABA Data Catalog	
Architecture	Json 160 Tables				Pata Catalog-JsonTes	
Ompliance	Data Center-sql_20220623		📥 Asia Pacific Region			
📄 Reports	🖬 💂 BikeStore				🖺 Data Catalog-sql_202	
💥 Tools	Enterprise Infrastructure Landscape-1					
Assessment	🛢 💼 Data Center-1		📤 American Region			
🛱 Collaboration	🖬 💂 AdventureWorks2017			Microsoft SQL Server	🖺 Data Catalog-1	
🖑 Environment 🗸 🗸	Duplicated - 02:34:42] Enterprise Infrastructure La	indscap				
🔍 Standard Navigation						
協 EA Projects						
🍘 DataType Packages						
Software Technologies						
🍘 Infrastructure Landscape						
🛆 Sites						

6.19. Concept Excel Template

Now it is possible to import business data by specifying separately object as concept (for example: Customer, Order, Product....) and other objects as information Item (Customer name, product code, address, age...).

6.20. Dashboards

HOPEX Data Governance provides ready-to-use dashboards for Chief Data Officers and Data Managers to manage and follow-up data governance processes.

These dashboards are focused on the following aspects:

• Build the Community

- Concept Domain Map
- Roles and responsibilities

• Data Asset Management

- Defined Terms
- Data Assets/Dictionary
- Data Assets/Data Categories

• Data Quality

- Number of created Data Lineage for sensitive and Golden Data Assets
- Data Quality Policies per dimension



- Data Quality Assessments of last 12 months
- Distribution of DQ Assessment per dimension

• **Regulatory Compliance**

- Number of constrained sensitive / Golden Data Asset per regulatory
- Number of constrained sensitive Data / Golden Asset per policy framework



6.21. Technical Data Lineage

From the #CP4, Data Governance Solution integrates new component to help organization to scan their Data sources and application code to build technical Data lineage.





Technical Data Lineage

A new partnership is created between Manta and Mega to offer customers the best features in the context of data processing scans. Manta is a leading reference and pioneer in the field of analysis and extraction of data flows.

All Technical Data Lineage feature are provided in one new product Option that is protected by a new license: "*HTDL*"

Remark: to support this new feature of Technical Data Lineage, some modifications are made at the Metamodel that can have impact of some existing diagrams of functional Data Lineage. If this the case, please contact MEGA Support.

6.21.1. Technical Data Lineage Import

From the #CP4, it will be possible to use Manta scan and export all Technical Data Lineage as CSV files. These files can be imported as zip file at Data Catalog level.

A new button is available From Data Catalog Hierarchy View to import zipped Manta CSV files:

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· <] <] =] =] =] =] =] =] <] <]]	Inventor Data Disco E C E C E C E C E C E C E C E C E C E C	ry Data Source Snaps	Technical Data Lineage Impo Description d Bu I Data C	iatalog This tool Only CSV etalog:*	Data Categories allows to import Technic Files are accepted. Central Data Catalog Central Data Center openmanta.zip	Tags			siness Info	[Search Fie > > Browse	d Type	٩
ය ව				-	echnical Data Lineage		heduled successf	ully.	~ ×		Cancel		ļ

The zip file contains the following csv:

MEGA

- o Dictionary.csv
 - o Object.csv
 - o Lineage.csv

The zip file is uploaded in HOPEX as Business document of selected Data Catalog and a new Job is created and scheduled to import all Meta data, data processing and lineage objects in HOPEX.



At the end of the import a notification and email will be sent to Data user that started the import and the Data Catalog Owner.

The imported objects are:

MEGA

• Metadata structure

In the case of scanned Data sources, metadata objects as deployed data store, schema, meta dataset, metafield are imported from Dictionary.csv file.

Data Processing

Data processing can be stored Procedure, triggers or programs in the case of scanned code as Cobol.

• Flows:

Are Data flow between Data Processing and processed data

HOPEX Data Gover	rnance 🔁 Search	• Q ~		
E Catalo	gs / 0SLE_Data Catalog_01 🗲 Back		🗖 😫 OSLE_Data Catalog_01	
•	SLE_Data Catalog_01		Managed Data Sources	
C) Home	General V Characteristics Business Data	Metadata Regulations Data Quality	🗖 🔚 MSSQL	
ଚ୍ଚ	✓ Identification		🗖 💂 manta	
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Catalogs			■ »ii dwh	
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Architecture	 Managed Data Sources 			
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			T_COLS	
	Name t	Description	Pe v1	
		Import in progress	Pe view5	
	SMALL.zip	Import in progress		
	SMALL.zip	Successfully imported	Stored Procedure	
	SMALL.zip	Import in progress	HISTORIZE_CONTRACT	
				_

Remarks: from the #CP4 version, in Data Catalog Hierarchy view:

MEGA

 deployed data stores are now grouped by software technology that represents the Data Source kind

6.21.2. Technical Data Lineage Visualization

When metadata is imported into Manta, it is possible to view their technical Data lineage by calling the Manta Viewer tool.

This access requires parameters to be indicated in the Manta integration option:



Note that the Manta product can only be deployed On Premise version, so it is important that access is authorized between its server and that of HOPEX, which can be either On Premise or Cloud.

Then from the characteristics page of a meta dataset or meta field, it is possible to call the Manta Viewer.

Other parameters are to be entered such as the level of data flow depth as well as the version of the object in Manta.

For security reason, the user must have its own credentials to access to Manta tool.



6.21.3. Data Processing

New tabs of Data Processing are available from:

- Data Catalog
 - to access all imported programs that are imported from Manta files and grouped in library that is included in that same Enterprise than the Data Catalog.

Meta dataset and Metadata field

o to access to their Data Processing.

6.21.4. Data Processing Mapping

The data processing and their flows produced by Manta can be linked to the applications, their IT service components, micro-services, and System Processes which are inventoried and/or designed in HOPEX HITA and BPA solutions.

New matrixes are provided to make this mapping manually. They are available from "Application and Data Processing" sub menu of "Tools" menu.



6.22. Reports

New reports are available to visualize Data Processing from Metadata reporting page:

- Metadata Processing Dendrogram
- Metadata Processing Graph





• Data Dendrogram Report

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A new report in the form of a dendrogram summarizes all the description of a data which are grouped in folders. This report replaces the old dendrogram reports which presented the same information but in a partial way.




7. NAF Improvement

From the CP3 NAF has his own Desktop and profiles instead of EA Enterprise Desktop.

• Profiles



Remark: for existing Customer, it is necessary to create a new Profile Assignment to have access to this new Desktop.

7.1. Desktop

By default, the new Desktop give access to the same Architecture Description navigator as before.



Now from the CP3, it is possible to create a new working environment on architecture description object to Visualize NAF Views and sub views as menu and sub menus in the Desktop.



Switch on this working environment.

MEGA

MEGA





Figure 9 - Business Continuity Management menu

8. HOPEX IRM

8.1. Business Continuity Management

Business continuity may be defined as "the capability of an organization to continue the delivery of products or services at pre-defined acceptable levels, following a disruptive incident".

HOPEX IRM now integrates a comprehensive Business Continuity Management (BCM) module, allowing organizations to:

Analyze the criticality of their processes via Business Impact Analysis (BIAs);

Build and test Business Continuity Plans (BCPs) and

Manage disrupting events to ensure the recovery of affected operations within the pre-defined time objectives.



8.1.1. Start new BCM initiative

To launch a new Business Continuity Management initiative, the user must create a BCM System. This is the object which defines the scope of the continuity project, i.e. the entity and processes starting from which the various Business Impact Analysis (BIAs) are launched and monitored.

Figure 10 - BCM System wizard

Figure 11 - BCM System property page

Create BCM System	2 ×
Name*	
BCM System Belgium	
Entity*	
Belgium	>
Processes	
Develop and Manage Human Capital × Procurement ×	\sim
0	K Cancel
-	

BCM Systems can be created from the menu "Business Continuity>Preparation>BCM Systems".

To create a BCM system, the user should provide:

A name

An entity – This is the main entity whose processes are analyzed for business continuity purposes

A list of business processes – These are the root processes, also referred to as the BCM System scope, starting from which the user can select the processes to analyze via a BIA. This field proposes all the business processes directly linked to the selected entity.

BCM System Begli	um		
Characteristics	Business Impact Analy	Monitoring	Activity Feed
• Overview			
Name*			
BCM System Beglium			
Entity		Responsible	
Belgium		Douglas	>
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✓ Scope			



Figure 12 - BIA wizard

From a BCM System the user can create one or more Business Impact Analysis, through a dedicated wizard, available from the page "Business Impact Analysis".

This wizard allows to select the processes to be analyzed, via a hierarchy of processes, built starting from the business processes belonging to the BCM System scope.

For every process selected via this wizard, a new BIA is created with status "Draft".

Every BIA has a responsible, which by default is the process owner.

	BIA Responsible	RTO	Business Impact	Last BIA
Develop and Manage Human Capital D				
Develop and manage HR planning, policies, and strategies				
Develop and implement human resources plans				
Develop competency management models				
Develop human resources strategy		2 Days	Medium	7/28/2021
Monitor and update plans				
Im Hiring Process				
Manage employee information				
Manage HR Administration and Payroll				
Manage Skills and Competences				
Recruit, source, and select employees				

Figure 13 - BIAs of a BCM System

	3CM System Beglium						
	Characteristics	Bu	siness Impact Analy	rsis		Monitori	ng
	Create your Business Impact Analyses from here. Click ti You can also send an e-mail to BIA responsible users for				launch the l	BIA.	
€	New						
ו	Name †	Status	Closure Date 🖡	BIA Responsible	RTO	Business Impact	ВСР
ו	ප් Belgium > Develop and Manage Human Capital > Ma	Ongoing		Hugo			
1	ල් Belgium > Develop and Manage Human Capital > Ma	Ongoing		Antoine			
]	ල් Belgium > Develop and Manage Human Capital > Rec	Draft		John			
]	\mathfrak{S}^*_{C} Belgium > Procurement > Long Term Investment	Ongoing		IMPERIALI Michele			
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]	\bigotimes^* Belgium > Develop and Manage Human Capital > De	Closed	11/12/2021	IMPERIALI Michele	2 Days	Medium	
1	ප් Belgium > Develop and Manage Human Capital > Hiri	Closed	11/12/2021	Adam	2 Days	Low	
	ි Belgium > Develop and Manage Human Capital > Ma	Closed	11/12/2021	Francesca	1 Week	Medium	
	ଙ୍କ Belgium > Develop and Manage Human Capital > Ma	Closed	11/12/2021	Grace	2 Days	Critical	O Business Continuity Plan HR
1	C Belgium > Procurement > Standard Purchasing Proce	Closed	11/12/2021	Budolf	1 Dav	Critical	O Business Continuity Plan Fin

8.1.2. Business Continuity Analysis Template

Every new BCM System uses a template, called Business Continuity Analysis Template, which defines the entire logic that is used when carrying out Business Impact Analyses.

The Business Continuity Analysis Template defines things such as:

The list of impact types that are assessed via the BIA (e.g. financial, reputational, operational, regulatory, environmental, etc.).For every impact type, the user can specify:

A weight that will be used to compute the BIA results. The possible answers and their weights.

The list of downtime periods that will be used when assessing every given impact on the analyzed processes. For every downtime period, the user can specify a weight that is used to compute the BIA results.

The possible outcomes of the BIA in terms of business impact (e.g. critical, medium, low).

The rules that are used to compute respectively:

The weight of each pair (question, answer) The Recovery Time Objective (RTO) The business impact

By default, HOPEX delivers one standard template, called "Standard Business Continuity Analysis Template", thus every new BCM System will be created using this template.

If the organization defines its own template, the wizard to create a new BCM System will include an additional field to specify what template should be used when carrying out the BIAs.

Only the IRM Functional Administrator can create new Business Continuity Analysis Templates, using the dedicated menu Administration>Business Continuity.

Important! Once a BCM System is created, it is not possible to change the associated Business Continuity Analysis Template.

From the Administration>Business Continuity menu, the IRM Functional Administrator can:

- Create new Business Continuity Analysis Templates
- Create new impact types and downtime periods
- Create new rules to compute the results of the BIAs



Figure 15 - Send BIA notification emails to responsible users continuity



8.1.3. Managing a Business Impact Analysis

The objective of a Business Impact Analysis (BIA) is to assess the business impact of a given process and what its Recovery Time Objective (RTO) is, which is defined as the maximum tolerable time of process unavailability.

To manage all existing Business Impact Analysis the user can do so via the menu "Business Continuity>Preparation>Business Impact Analysis".

Important! BIAs must be created from within a BCM System, from the page "Analysis". From this page the user can select one or more BIAs and use the dedicated button "Send to Responsible" to notify via email the responsible users that they are required to fill out the BIA.

НОРЕ	X ≓ Select an object type ✓ Find object > Q ✓	
Но	me / Business Continuity / Preparation / BCM Systems / BCM Program USA 🛛 🗧 🗧 Back	
»	BCM Program USA	
دم ع د	Characteristics Business Impact Analysis	
0	Create your Business Impact Analysis from here. Click the "New" button to select one or more pro You can also send an e-mail to BIA responsible users for all BIAs which are in Draft or Ongoing sta	
₩	🕒 New 🛞 Remove 🖂 Send to Responsible 🖺 Instant Report 🚦 🗙 2 selected	t
	Name 1	Status
C	🔲 🍳 USA > Develop and Manage Human Capital > Develop and manage HR plannin 🖧 🗟 🗹 😫	Draft
¢.	\square $\stackrel{ ext{cl}}{ ext{cl}}$ USA > Develop and Manage Human Capital > Hiring Process	Closed
Ø	✓ USA > Develop and Manage Human Capital > Manage employee information	Draft
R	☑ 🥂 USA > Develop and Manage Human Capital > Manage HR Administration and Payroll	Draft
	\square $\stackrel{{ m ev}}{\sim}$ USA > Develop and Manage Human Capital > Manage Skills and Competences	Draft
iii A	\Box $\overset{\frown}{\simeq}$ USA > Develop and Manage Human Capital > Recruit, source, and select employees	Draft

For main IRM users, via the menu "My Tasks>Business Continuity", they can access to:

Figure 16 - New BIA to complete email notification

- All BIAs in status ongoing or completed where the logged in user is identified as responsible (i.e. it is the person who must fill out the BIA).
- All BIAs, with status different from closed, belonging to a BCM System where the logged in user is responsible.



A BIA is characterized by the following info:

Dashboard indicators highlighting the results of the BIA Name BCM System the BIA belongs to Entity the analyzed process belongs to Analyzed process BIA responsible – The user in charge to fill out the BIA Status – When the BIA is in Draft status this field is hidden, and a button "Send to Responsible" allows to notify the BIA responsible via email that he/she has to fill out the BIA. Once the button is clicked the BIA is moved to the status ongoing and the button disappears Creation Date – This is the creation date of the BIA Completion Date – Date at which the BIA responsible filled out the BIA closure Date – Date at which the manager has validated the BIA results and closed the BIA to prevent further modifications Figure 17 - BIA characteristics property page

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Characteristics			Analysis	Results		Continuity Plans	
	_						
Secovery Time Objective			Business Impact				
Overview							
lame*							
ame™ Belgium > Develop and Mar	nage H	uman Ca	apital > Manage empl	oyee information			
SCM System*	E	ntity		Process			
My new BCM System	>	Belgium	n >	Manage employee in	nformation	i	>
nalysis Responsible						Status	
IMPERIALI Michele					~ >	Completed	
reation Date			Completion Date		Closure I	Date	
/4/2021			8/4/2021				
escription							
		а <i>т</i>	II T T				=
Default font	•		<u> </u>	<u> </u>		- 0 := :=	-

Like for all other main HOPEX objects, it is also possible to add attachments to every BIA.

The Analysis page is where the actual analysis is carried out. It is here that the BIA responsible has to answer questions regarding the various types of impacts the business will face when the process is disrupted by an incident.

Until the BIA is in draft status, i.e., it has not been sent to the BIA responsible, this page is empty, and a message warns the user that the BIA has not been sent to the responsible yet.

Characteristics Analysis Results	Continuity Plans	Activity Fe	ed			
BIA Legend						
BIA Matrix						
 For every downtime period, specify the To make it easier to fill in the matrix, a 						
Complete Deactivate Autocomplete						
	12 Hours	1 Day	2 Days	1 Week	2 Weeks	1 Month
Impact Type 🕇	12 Hours		2 Days	1 Week	2 Weeks Critical	1 Month Critical
Impact Type † Financial		High	-			
Impact Type 1 Financial Operational	Medium	High Medium	Critical	Critical	Critical	Critical
Impact Type 1 Financial Operational Regulatory Environmental	Medium Medium	High Medium	Critical	Critical	Critical	Critical

The Analysis page contains two sections:



BIA Legend – It is collapsed by default and provides valuable info regarding the meaning of the various impact types and possible answers that the BIA responsible uses to fill out the BIA.

BIA Matrix – It contains the actual table to be filled out to compute the process business impact and Recovery Time Objective (RTO).

8.1.4. Fill out a Business Impact Analysis

Contributor users, have a dedicated menu ("My Tasks>Business Continuity") to access to all BIAs where they are identified as responsible.

BIAs listed under this menu are in one of the following statuses:

- Ongoing These are the BIAs yet to be filled out by the contributor.
- Completed These are the BIAs the contributor has filled out. He/she can reopen the BIA and modify their answers before resubmitting it for validation.

To mark a BIA as completed, the user must fill out all cells of the BIA matrix, which means respond to every question regarding the different impact types and downtime periods.

To help the process owner save time, if a past BIA exists for the process under analysis, the new BIA will be prefilled with the latest existing BIA answers.

To make it easier to fill out the BIA matrix, whenever the user fills out a cell, an algorithm automatically fills out with the same value all cells on its right.

This autocompletion mechanism is activated by default, but can be disabled via the dedicated button "Deactivate Autocomplete" visible on top of the BIA matrix.

Once the user has filled out the matrix, he/she can flag the BIA as completed clicking the button "Complete" displayed on top of the matrix.

This will move the BIA in completed status and will launch the automatic computation of the BIA results, i.e., the Recovery Time Objective (RTO) and the business impact, both displayed in the Results page.

8.1.5. Validate BIA results

From the BIA Results page, the BCM manager can eventually override the values computed by the algorithm for both RTO and business impact, providing a mandatory explanation for the adjusted values.



🌒 Belgium > Develop and	Manage Human Capita	l > Manage employee info	rmation i
Characteristics	Analysis	Results	Continuity Plans
Analysis tab. You are free to c	verride the automatically con the Close BIA button. This w	O) and business impact, based or mputed values if you feel they are ill prevent further modifications o n.	not correct.
Computed RTO		Adjusted RTO	
2 Weeks		1 Week	~
Reason for adjusted RTO*	<i>Ι <u>U</u> Τ΄ τ' <u>Τ</u></i>	· · · · · E = =	
Computed Business Impact		Adjusted Business Impact	~
Close BIA Reopen BIA			

If the user overrides the automatic computed RTO and business impacts, it is the overridden value that is displayed on the BIA dashboard, and not the automatically computed one.

Once the BCM manager has reviewed the BIA results, he can close the BIA, via the "Close BIA" button. This will prevent any further modification of the BIA results. It is always possible to reopen a BIA, if new edits are required, via the "Reopen BIA" button.

8.1.6. BCM System Monitoring

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At any given time, BCM managers can monitor a given BCM System. The page "Monitoring" of a BCM System displays detailed information on all closed BIAs, BCP exercises and crisis.

Characteristics Business Impact Analysis			Monitoring				Activity Feed			
A Results										
For every process, the RTO and Busines	Business Impact Analysis for each process is prot s Impact resulting from the last BIA are displayed malyzed downtime period is also displayed.	vided bei 1.	low.							
	Process	RTO	Business Impact	Last BIA	12 Hours	1 Day	2 Days	1 Week	2 Weeks	1 Month
Develop and Manage Human Capital > Ma	nage employee information	1 Week	Medium	11/12/2021연 Open	Medium	Medium	Critical	Critical	Critical	Critical
m Develop and Manage Human Capital > Ma	nage Skills and Competences	2 Days	Critical	11/12/2021연 Open	Medium	Medium	Critical	Critical	Critical	Critical
m Develop and Manage Human Capital > De	velop and manage HR planning, policies, and strategies	2 Days	Medium	11/12/2021연 Open	Medium	Medium	Critical	Critical	Critical	Critical
m Develop and Manage Human Capital > Hit	ing Process	2 Days	Low	11/12/2021연 Open	Medium	Medium	Medium	Medium	Medium	Medium
Procurement > Standard Purchasing Proc	iss (ERP)	1 Day	Critical	11/12/2021연 Open	Medium	Critical	Critical	Critical	Critical	Critical

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8.1.7. Managing Business Continuity Plans

The objective of a Business Continuity Plan (BCP) is to identify all the steps required to recover a process from an incident and ensure operational continuity.

Business Continuity Plans can be created from within a Business Impact Analysis and are automatically associated with the process analyzed by the BIA.

To make it easier to manage the review of existing BCPs, it is possible to duplicate BCPs. The result is a BCP which is an exact replica of the existing one, which can be archived for audit purposes.

	New Business Continuity Plan	z x
Γ	Create Business Continuity Plan	
Ŀ	 Duplicate Existing Business Continuity Plan 	
	Source Business Continuity Plan*	
	Business Continuity Plan Procurement 2021	
	Name*	
	Business Continuity Plan Procurement 2022	
	ОК Сап	cel
		_

Figure 21 - Duplicate existing BCP

A list of all existing BCPs can be accessed from the menu Business Continuity>Preparation>Business Continuity Plans.

A BCP is characterized by an overview, which contains the following info:

- Name and button to download the BCP in Word format
- Entity Together with the field Process, it defines the scope of the BCP
- Process
- Status
- Valid From and Valid Until It is the validity period of the BCP
- Description

There are then the following additional sections:



Figure 22 - Business Continuity Plan Figure 23 - BCP recovery steps

- Triggering Risks It lists the risks which can trigger the BCP. By default this list is automatically filled with all risks impacting the BCP process.
- Responsibilities It defines RACI roles with respect to the current BCP
- Attachments

O Business Continuity Plan Procurement 2021						
Characteristics	Recovery Steps	Activity Feed				
∧ Overview						
Name* Business Continuity Plan Procurement 20	1	🐴 BCP Report				
Entity	Process	Status*				
Italy	> Long Term Investment	> Ongoing				
Valid From	Valid Until	*				
1/1/2021						
Description						
□ Default font v B I	<u>U</u> T [*] T [*] I ♥ m ♥ Ξ					
✓ Triggering Risks						
✓ Responsibilities						
✓ Attachments						

To define how to recover the process after a disrupting event, the BCM manager shall define the recovery steps in the corresponding page.

Recovery steps are characterized by a description and a responsible person.

My Business Continuity Plan							
Characteristics	Activity Feed						
Please define below the steps to recover the business from disruptive events.							
🕑 New 🛯 📲 Reorganize 📮 Prope	🕣 New 🐚 Reorganize 📮 Properties 🛞 Remove 🗐 Instant Report 🚦 🗙 1 selected 🍸						
Name 1	Responsible						
🔽 💻 Step 3	Dan	Lorem ipsum					
🗌 💻 Step 1	Adam	Lorem ipsum					
🗌 💻 Step 2	Carolina	Lorem ipsum					

Once a process is analyzed, a new page "Business Continuity" is added to its properties.



Figure 24 - Process business continuity properties

Pay Employees		1
Characteristics Business continuity Reporting V Activity Feed Workflows		
Business Continuity Plans		
0 Business Continuity Plans can be created from a Business Impact Analysis, page "Continuity Plans".		
Ongoing BCPs O Archived BCPs		Ŧ
Name t	Valid From 🖡	Valid Until
O Business Continuity Plan employees payment management 9/12	2/2021	
<pre><< < Page 1 of 1 > >> 2 Show 50 C elements</pre>		Displaying 1 - 1 of 1
∧ Business Impact Analysis		Ŧ
D Name 1	Closure Date 🖡	RTO Business Impact
□ 🥰 Belgium > Develop and manage human capital > Pay Employees 2021	9/12/2021	12 H Critical
G(Belgium > Develop and manage human capital > Pay Employees	9/12/2021	1 Day Critical

From this page, users can access to the full list of business continuity plans defined on the process, whether they are ongoing or archived, plus the full list of business impact analyses.

Figure 25 - BCP Word report

To access to the full list of BCPs existing in the environment, there is a dedicated menu, under Business Continuity>Preparation>Business Continuity Plan

From any list of BCPs, or from within the property page, it is possible to download a Word version of the business continuity plan.

HOPE)								
Hon	ne / Business Continuity / Preparation / Business Continuity Plans < 🗲 Back							
»	The list below displays all existing Business Continuity Plans (BCPs). New BCPs can be created from a Business Impact Analysis, from the "Continuity Plans" page.							
	📮 Properties 🛞 Remove 📲 BCP Report 📳 Instant Report 🚦 🗶 1 selected							
CD	Name Name	Entity						
ĝŧ	Status : Archived (1)							
₽	🗆 📀 Business Continuity Plan Procurement 2020 🔷 Italy							
	Status : Ongoing (7)							
<u> </u>	Business Continuity Plan Procurement 2021	🔷 Italy						
	Business Continuity Plan HR Processes Belgium	🔷 Belgium						
¢Å.	Business Continuity Plan Finance Belgium	🔷 Belgium						
Ô	Business Continuity Plan Procurement	🔷 Belgium						
Ē.	Business Continuity Plan employees recruiting France	France						
1000 1000 1000	🗆 🗘 Business Continuity Plan employees management France 💿 🖾 🗄	France						
)	Business Continuity Plan Hiring Process USA	ousa 💧						



Figure 26 - Business continuity exercise characteristics

8.1.8. Test Business Continuity Plans

To regularly test existing Business Continuity Plans, the user can create business continuity exercises from the menu Business Continuity>Exercises.

In the Characteristic page of an exercise, the user can find the following info:

- A dashboard with the number of BCPs tested by the exercise, the hours taken to complete it, the completion rate and whether the exercise was successful or not
- Basic information such as the exercise start and end date, status, and scenario
- The list of business continuity plans tested by the exercise
- Any relevant attachment

🛞 USA Business Contin	uity Plan testing - Year	2020	:
Characteristics	Tested Plans	Results	Activity Feed
1 Tested Plans		100% Completion Pass Result	
Name* USA Business Continuity Plan t	esting - Year 2020		
Start Date 2020/11/12 11:03:31 (UTC)	End Date 2020/11/13 11:0	Statu 3:31 (UTC) > Close	
Exercise Scenario*			
[] Default font Power failure	В І <u>U</u> Т[*] т[*]	II • II • I = =	
 Tested Business Conti Attachments 	nuity Plans		

From the Tested Business Continuity Plans section, the user can select one or more BCPs and trigger an email notification to be sent to all BCP stakeholders, informing them about the scheduled exercise.

The email notification includes the concerned BCP as attachment.

To access the details about every business continuity plan being tested, the user shall access the "Tested Plans" page, where for every BCP, the list of recovery steps, responsibilities and attachments is provided.

Figure	27 -	Tested	plans	details
--------	------	--------	-------	---------

MEGA

🛞 USA Business Contin	uity Plan testing	j - Year 2020			:	
Characteristics	Tested	Plans	Results	А	ctivity Feed	
All the information regarding the Business Continuity Plans (BCP) being tested is available below. In case of multiple BCPs, use the Business Continuity Plan drop down to switch between them.						
Business Continuity Plan						
Business Continuity Plan Hiring P	Process USA					
Start Date 2020/01/01 10:59:46 (UTC)	End 1	Date)/01/02 10:59:46 (UTC)		S tatus* Completed		
Entity USA	Proces > Hiring	s s Process			>	
Description						
Recovery Steps ↔ New					T	
Name Status St	art Date	End Date	Execution Time	Responsible	Description	
1. Step 1 Completed 11	/12/2021 6:00:21	11/12/2021 12:00:2	6h	Ben	Lorem ipsum	
2. Step 2 Completed 11	/12/2021 10:00:4	11/12/2021 12:00:4	2h	Kate	Lorem ipsum	
3. Step 3 Completed 11	/12/2021 9:00:56	11/12/2021 12:00:5	3h	Alex	Lorem ipsum	
✓ Responsibilities						

Starting from this page, the user can manage each BCP being tested. This means:

- Modify the BCP status, its start and end date
- Modify or delete existing BCP recovery steps, or adding new ones. In the latter case, a column "In original BCP?" will inform the user if the step was not originally included in the BCP.

To monitor the overall progress of the exercise, a dedicated page "Results" is available.



Figure 28 - Business continuity exercise results

🛞 USA Business Contin	uity Plan testing -	Year 2020)		:
Characteristics	Tested Plans		Results		Activity Feed
This page displays the res algorithm determines whe evidence.					
Tested Business Continuity Plans	5				
🖺 Instant Report	× 1 selected				T
✓ Name Î		Status	Execution Time	Process RTO	Pass/Fail
Business Continuity Plan	Hiring Pro 🖧 🚦	Comple	1d	1 Day	✓ Pass
🛠 🔇 Page 1 of 1	> » ∂	Show 50	elements	E	visplaying 1 - 1 of 1
Completion Rate	Success R	ate		Computed Resul	t
100%	100%			Pass	
Exercise Results					
Default font	B <i>I</i> <u>U</u> T [•]	T' <u>T</u>	• ■ • ≞	± ∃ Ø	

From this page the user can monitor the status of each BCP, and the time taken to complete it. This time is automatically compared with the associated process Recovery Time Objective. If the time taken to complete the BCP is less than the process RTO, the BCP is considered as passed, otherwise as failed.

Based on the Pass/Fail score of the tested business continuity plans, two rates are computed automatically:

Completion Rate -> The percentage of BCPs which were completed, regardless the time taken

Success Rate -> The percentage of BCPs which were completed in a time which is less than the associated process RTO

If the Success Rate is equal to 100%, the exercise is considered as Pass. The user can override this value.

Additional comments can also be provided in a dedicated "Exercise Results" field to record any evidence and lesson learned.

8.1.9. Managing Crises

HOPEX IRM now integrates an intelligent mechanism which warns GRC professionals in case of potential crisis striking the organization, guiding every stakeholder towards the full recovery of impacted processes.

The way HOPEX realizes that a process may have been impacted by an incident is simple: whenever an incident is linked to a risk, which in turns impacts a process of the organization for which a BCP exists, the user is prompted with a warning, and he/she can decide whether to trigger the corresponding business continuity plan¹ or not.

Once the user is prompted with the crisis warning, he/she can either decide to trigger a new crisis or add the impacted process to an existing one.

As soon as the wizard is closed, all persons identified in the RACI of the business continuity plan of the impacted process and those responsible for one or more recovery steps will be notified via email in order to ensure a prompt recovery.

The email notification includes the concerned BCP as attachment.

The user can access a full list of current and past crisis via the menu Business Continuity>Crisis Management.

In the Characteristic page of a crisis, the user can find the following info:

- A dashboard with the number of processes impacted by the crisis and the hours passed since the beginning of the adverse event
- Basic information such as the crisis start and end date, status, and description
- The list of business continuity plans triggered by the crisis
- Any relevant attachment

¹ The requirements that must be met are: incident must be in a status which is either "To be validated" or "Validated", the risk linked to the incident must be in the scope of the process. The process must have an associated BCP in status "Ongoing", and the risk must be listed in the "Triggering Risks" list.

MEGA

Figure 29 - Crisis property page



(1) DDoS Attack			:
Characteristics	Recovery Steps	Results	Activity Feed
P 2 Impacted Processes	1301 hour(s) Elapsed Time		
Overview Name* DDoS Attack			
Start Date 2021/11/12 10:46:12 (UTC)	End Date	Status* > Ongoing	
Description			
C Default font 🗸	Β Ι <u>U</u> Τ΄ Τ΄	I • II • I = =	≡ Ø ≡ ≡
 Triggered Business Co Attachments 	ntinuity Plans		

To access the details about every business continuity plan triggered by the crisis, the user shall access the "Recovery Steps" page, where for every BCP, the list of recovery steps, responsibilities and attachments is provided.



Figure 31 - Crisis management results

(11) DDoS Attack										:
	Characteristics	Recover	ry Steps		Results			Activity Feed		
i Information reg	Information regarding the Business Continuity Plans (BCP) triggered by the crisis is available below. If there are multiple BCPs, use the Business Continuity Plan drop-down to switch between them.									
Business Continuity P	Business Continuity Plan									
Business Continuity PI	Business Continuity Plan HR Processes Belgium									
Start Date 2021/11/11 05:56:33	3 (UTC)		End Date				>	Status* Ongoing		
Entity Belgium			Process Manage Skills ar	nd Competences						>
Description										
Recovery Steps								Ţ		
Name	Status Start Date	End Date E	Execution Time R	Responsible	Description	Results	In original BCP?			
🗌 1. Step 1	Completed 11/12/2021 10:55:3	11/12/2021 11:55:3 1	h Fi	rancesca I	Lorem		Yes			
2. Step 2	Completed 11/11/2021 11:55:5	11/12/2021 11:55:5 1	d E	ric I	Lorem		Yes			
3. Step 3	Completed 11/12/2021 7:56:09	11/12/2021 11:56:0 4	h H	lugo I	Lorem		Yes			
✓ Responsibili	ties									

Starting from this page, similarly to what is available for BCP exercises, the user can manage each BCP triggered by the crisis. This means:

- Modify the BCP status, its start and end date
- Modify or delete existing BCP recovery steps, or adding new ones. In the latter case, a column "In original BCP?" will inform the user if the step was not originally included in the BCP.

To monitor the overall progress of the BCP triggered by the crisis, a dedicated page "Results" is available.

	Characteristics	Recovery Steps		Results	Activity	y Feed
ec	This page displays the results For every BCP, the compariso - a Pass/Fail result - a success rate for the manag uted Business Continuity Plans	n of its execution time wil				
]	Name †		Status	Execution Time	Process RTO	Pass/F
-	Business Continuity Plan employ		Completed	1d 1h 49mn 4s	2 Days	 Pass Pass
כ	Business Continuity Plan employ	rees recruiding mance				

From this page the user can monitor the status of each BCP, and the time taken to complete it. This time is automatically compared with the associated process Recovery Time Objective. If the time taken to complete the BCP is less than the process RTO, the BCP is considered as passed, otherwise it will be considered as failed.



Based on the Pass/Fail score of the triggered business continuity plans, two rates are computed automatically:

Completion Rate -> The percentage of BCPs which were completed, regardless the time taken

Success Rate -> The percentage of BCPs which were completed in a time which is less than the associated process RTO

Additional comments can also be provided in a dedicated "Crisis Results" field to record any evidence and lessons learned.

8.1.10. BCM Concepts

The following main concepts exist in HOPEX to manage everything related to Business Continuity Management.

Concept	Description
BCM System	This is the main entry point of a BCM initiative. It is used to define the scope of the business continuity management project, i.e. the entity and main processes starting from which the various Business Impact Analysis (BIAs) will be launched and monitored.
Business Impact Analysis (BIA)	The Business Impact Analysis (BIA) is the object which allows to study the business criticality of a given process. It consists in a questionnaire which is meant to analyze the evolution of the impact that the business will face in case of process disruption, as time goes by.
Business Continuity Plan	The Business Continuity Plan (BCP) outlines the set of steps required to recover a process affected by a disrupting event.
Crisis Management	The Crisis Management is the crisis control room. From this object it is possible to access to all BCPs triggered by a crisis and thus ensure all required recovery steps are executed as planned.

In addition to the concepts listed above, other new concepts have been introduced to manage the logic implemented to carry out the Business Impact Analysis.

Concept	Description		
Business Continuity Analysis Template	This is the object that holds the entire logic used by the BIA, such as: the list of impact types for which the user should provide an answer, the list of downtime periods and the rules to automatically compute the BIA results.		
Impact Type	These are the types of impacts that are used by the BIA to compute the criticality of a given process (e.g. Financial, Operational, Regulatory, Reputational, Environmental)		
Downtime Period	These are time periods which are used by a BIA to ask the question "what is the impact if the process is unavailable for this amount of time?" (e.g. 1 hour, 2 hours, 1 day)		
Computation Rules	These objects hold the macros which compute the BIA results, based on the answers provided by the user.		

8.1.11. Simpler BCM initiative scope definition – #CP4

A new command has been introduced in the pop-up menu of Business Processes to quickly add them to BCM Systems.



Check the on-line documentation for more details:

HOPEX BCM > Managing BCM Systems > Creating a BCM System and Defining its Scope².

8.1.12. Create a new BIA from the assessed object – #CP4

A new command has been introduced in the contextual menu of Business and Organizational Processes to quickly create a BIA.

Check the on-line documentation for more details:

<u>HOPEX BCM > Defining a Business Impact Analysis > Creating a BIA (Business Impact Analysis)</u>³.

8.1.13. E-mails from BCP Test and Crisis management have been reviewed – #CP4

The content of the e-mails has been aligned with all the other IRM-related e-mails. Also, the login link in those e-mails has been changed to bring the user directly to the properties of the object he should access.

8.1.14. Product Key and Profiles Access Rights

A new product key is now available to filter all concepts and menu entries related to BCM. The key name is "HOPEX BCM".

The IRM desktop is now enriched with new entries, to provide access to the main BCM features. The table below provides a description for each new menu entry, together with the profiles which can access it.

Menu Entry	Description	Profiles with Access Right
My Tasks>Business Continuity	Lists all Business Impact Analysis that either belong to a BCM System for which the current user is in charge, or have the current user set as BIA responsible. All continuity plans, tested by an ongoing exercise, where the current user is responsible for one or more BCP steps. All continuity plans, triggered by an ongoing crisis, where the current user is responsible for	IRM FA, IRM Manager, Risk Manager,
	one or more BCP steps.	
My Tasks>Business Continuity (contributor)	All BIAs to be filled by the current user (these are the BIAs in status Ongoing or Completed, where	

² To be able to view the documentation, you must login to the MEGA Community or to HOPEX.

³ To be able to view the documentation, you must login to the MEGA Community or to HOPEX.



	 the current user is BIA responsible). All continuity plans, tested by an ongoing exercise, where the current user is responsible for one or more BCP steps. All continuity plans, triggered by an ongoing crisis, where the current user is responsible for one or more BCP steps. 	
Business Continuity>Preparation	It allows to launch BIAs and build BCPs.	IRM FA, IRM Manager
Business Continuity>Exercise	It allows to schedule and run BCP tests.	IRM FA, IRM Manager
Business Continuity>Crisis Management	It allows to create and follow-up on ongoing crisis, giving access to the information related to BCPs to recover disrupted processes.	IRM FA, IRM Manager, Risk Manager, Incident and Losses Manager
Administration> Business Continuity	It allows to define the logic and algorithms used when carrying out BIAs in order to compute business impact and RTO.	IRM FA

8.1.15. BCM has been integrate into BPA – #CP4

BCM has been added to BPA as a possible option.

With this change, BPA profiles will be able to access the Continuity menu and cover the BCM use case.

Check the on-line documentation for more details:

HOPEX BCM > Introduction to HOPEX BCM > Tasks by Profiles⁴.

8.1.16. Available profiles – #CP4

Some profiles have been granted access to BCM menus and functionalities (if a BCM key is available to the user)

- Risk Manager, as an end-user
- Process Functional Administrator, as an administrator
- Process Manager, as an end-user.

End users are not able to access the Administration area of the menu.

⁴ To be able to view the documentation, you must login to the MEGA Community or to HOPEX.

Figure 32 - Questionnaire with image and video

8.2. Questionnaire Builder

8.2.1. New Question Types

HOPEX V5 now provides three new types of questions:

HTML – It allows to add HTML content to existing questionnaires. For example, users can include YouTube videos simply copy-pasting the code provided by YouTube in the HTML question content. ⁵

Image – It allows to add images to existing questionnaires.

Expression – It allows to compute mathematical computations and other type of expressions that can then be displayed to the respondent (e.g. in case of risk assessment, the inherent risk can be computed based on the user's answers to impact and likelihood and displayed right into the questionnaire).

Assessment			
Assessed Objects	Status	Context	My questionnaire
Assessment Node	Not Started		
Assessment Node	Completed		
			Greetings from MEGA! Watch later Share

⁵ Make sure your HOPEX installation CSP is configured to allow content coming from external sources (e.g. in order to be able to include YouTube videos in your questionnaires, the following text must be added to your installation CSP: *frame-src* *.youtube.com;

MEGA		HOPEX V5 – Release Notes HOPEX I
Is visible? Expression (?) Press ctrl+space to get expression completion hint [question2]+(question2]] Is delegation authorized? Currency		
USD VIE	Assessment	
decimal	Assessed Objects Status Context	C temp
Format {0} Euros	Assessment N Not Started Assessment Node Not Started	1. Expr 21,300.581 Euros
Maximum Fraction Digits		2. question2
Minimum Fraction Digits -1		3. question3 21200.0005
✓ Use Grouping		
Figure 33 - Expression question properties	Figure 34 - E	Expression question

8.2.2. Excel Export/Import

From any questionnaire users can now export the list of questions in Excel format, answer the questions directly in Excel and then import them back into HOPEX.

This functionality makes it possible for anyone to complete a questionnaire, without having to access to HOPEX.

The following questions are not included in the export:

Panel - Questions of type panel are not represented in the Excel file. Only the questions they contain are considered.

HTML and Image – Questions of type HTML and Image require no answer, therefore they are not included in the Excel file.

Object – Questions of type Object are included in the Excel file, but only for information purposes, i.e. inform the end user that the questionnaire does provide a question which allows to link HOPEX Objects, but this is not possible using the Excel file.

File - Questions of type File are included in the Excel file, but only for information purposes, i.e. inform the end user that the questionnaire does provide a question which allows to upload documents, but this is not possible using the Excel file.

Checkbox - Questions of type Checkbox are included in the Excel file, but only for information purposes, i.e. inform the end user that the questionnaire does provide a question of type checkbox, but this is not possible to answer it using the Excel file.



Figure 35 - Questionnaires Excel export/import

Assessed Objects Double payment control Status Context Immetrory control Not Started MEGA Airport -> Subsidiaries -> Fi MeGA Airport -> Subsidiaries -> Fi Immetrory control Not Started MEGA Airport -> Subsidiaries -> Fi Pass Payment executed by an indepe. Not Started MEGA Airport -> Subsidiaries -> Fi Pass Providers apervoal Not Started MEGA Airport -> Subsidiaries -> Fi Pass Providers selection Not Started MEGA Airport -> Subsidiaries -> Fi Pass Regular and exhaustive control Not Started MEGA Airport -> Subsidiaries -> Fi Pass Regular and exhaustive control Not Started MEGA Airport -> Subsidiaries -> Fi Pass					¢,	
Pouble payment control Not Started MEGA Airport -> Subsidiaries -> Inventory control Not Started MEGA Airport -> Subsidiaries -> Number of customers Not Started MEGA Airport -> Subsidiaries -> Payment executed by an indepe Not Started MEGA Airport -> Subsidiaries -> Providers approval Not Started MEGA Airport -> Subsidiaries -> Providers selection Not Started MEGA Airport -> Subsidiaries ->	Assessed Objects			Double payment control		
Not Started MEGA Airport -> Subsidiaries Inventory control Not Started MEGA Airport -> Subsidiaries -> Fr Number of customers Not Started MEGA Airport -> Subsidiaries -> Fr Payment executed by an indepe Not Started MEGA Airport -> Subsidiaries -> Fr Providers approval Not Started MEGA Airport -> Subsidiaries -> Fr Providers selection Not Started MEGA Airport -> Subsidiaries -> Fr	Name 🕇	Status	Context 🔳			
Number of customers Not Started MEGA Airport -> Subsidiaries -> Fr Payment executed by an indepe Not Started MEGA Airport -> Subsidiaries -> Fr Providers approval Not Started MEGA Airport -> Subsidiaries -> Fr Providers selection Not Started MEGA Airport -> Subsidiaries -> Fr	2 Double payment control	Not Started	MEGA Airport -> Subsidiaries	MEGA Airport > Subsidiaries > France > Procurement > Payment		
Number of customers Not Started MEGA Airport -> Subsidiaries -> Fr Payment executed by an indepe Not Started MEGA Airport -> Subsidiaries -> Fr Providers approval Not Started MEGA Airport -> Subsidiaries -> Fr Providers selection Not Started MEGA Airport -> Subsidiaries -> Fr	Inventory control	Not Started	MEGA Airport -> Subsidiaries -> Fr	1. What is the quality of the design of control? *		
Payment executed by an indepe Not Started MEGA Airport -> Subsidiaries -> Fr Providers approval Not Started MEGA Airport -> Subsidiaries -> Fr Providers selection Not Started MEGA Airport -> Subsidiaries -> Fr	Number of customers	Not Started	MEGA Airport -> Subsidiaries -> Fr			
Providers selection Not Started MEGA Airport -> Subsidiaries -> Fr	Payment executed by an indepe	Not Started	MEGA Airport -> Subsidiaries -> Fr			
	Providers approval	Not Started	MEGA Airport -> Subsidiaries -> Fr			
Regular and exhaustive control Not Started MEGA Airport -> Subsidiaries -> Fr	Providers selection	Not Started	MEGA Airport -> Subsidiaries -> Fr			

8.2.3. Questionnaire Layout Management

Additional options are now available to modify the default layout of questionnaire instances. These options are to be found:

- In the properties of the questionnaire, section "Question"
- In the properties of each question, section "Layout"

Figure 37 - Manage questions layout

Figure 38 - Define tooltip on a question's possible answer

Figure 39 – Rendering of a tooltip on a dropdown question

Figure 36 - Questionnaire layout properties

MEGA

	Layout
Question	✓ Is start with new line?
Question title location	Hide Number
left 🗸	
	Title Location
Question Description Location	top
underTitle 🗸	Description Location
Show question numbers	defauit
on 🗸	Indent
Question Title Pattern	0
1. Question Title	Width
	200px
The question required symbol(s)	Min Width
-	200px
Question error location	Max Width
bottom 🗸	200px

8.2.4. Question tooltips

It is now possible to add tooltips on possible answers to a questionnaire's question. This feature applies to questions of type dropdown, checkbox and radio button. It allows to provide explanatory text to the questionnaire's respondent.

To do so the user has to use the questionnaire builder, open the properties of the question, open the "Choices" group, click on the "Edit" button of the answer for which he/she wants to define a tooltip and use the dedicated "Tooltip" text field to do so.

Choices	•
← Edit item: 1 Visible if	
The expression is empty.	•
Enable if	
The expression is empty.	•
Tooltip	
Here is my beautiful <u>tooltip</u>	
	11



Preview Questionnaire	
Assessment Assessed Objects 1 Status Context	A QT
Assessment Node Not Started	1. question1
	Choose
	Choose
	item1
	item2 ^{vs} Item 1 is the best
	item3
	item3

8.2.5. Questionnaire JSON

In order to make sure that past questionnaires are not affected if the questionnaire template they are based on changes over time a new mechanism has been put in place.

Whenever a questionnaire is closed, the associated JSON code is stored into a comment attribute. The JSON code is saved in the language used by the user when the questionnaire was closed. If the user tries to open such questionnaires, the questionnaire builder will display the content of this JSON; This means that from now on, edits to the corresponding questionnaire template will not impact the questionnaire instance.

An option called "Display closed questionnaires based on JSON archived at the time of questionnaire closure." has been added to the HOPEX options, under the menu "Tools>Assessment", to activate/deactivate the mechanism via which, when a closed questionnaire is opened, the questionnaire builder reads the content of the stored JSON code.

For questionnaires which are not closed the behavior remains the same, that is the questionnaire builder will display the questions of the associated questionnaire template, so if the questionnaire template changes, the questions displayed in the instance will change too.

8.3. Key Indicators

8.3.1. Automatic Value Computation

It is now possible to automatically compute the values of an indicator via a businessdefined logic.

To do so, users must exploit a new concept, called Indicator Value Computation Logic (a new section in the admin menu allows to create new logics).

Through this concept it is possible to specify the logic to be used to compute the Key Indicator values.

A ready to use Indicator Value Computation Logic exists, which allows to specify a query to be launched (with the frequency given by the "Measurement Frequency") and, if necessary, the query parameter.

Once the query is launched, HOPEX will count the query results and store the value in the indicator (e.g. "number of delayed action plans").

A "Test Computation" button allows to simulate the computation to ensure that the setup is correct.



Figure 40 - Key Indicator automatic value computation

Figure 41 - Key indicator time to failure notification

Characteristics	Values	Notifications	Indicator Graph	Action Plans	Activity Feed
This frequency 1) Automatical 2) Send notific	lows to specify is used to: ly compute th ations (to be the logic used	e indicator value activated in the No	,		nether values must be automatically computed.
Key Indicator - Mo	onthly Measure	ement Frequency			
Indicator Value Co Computation via q	-	gic			
 The comput 	tation logic co	unts the number o	ers: a mandatory "Qu f objects returned by r, you can specify it v	the query.	al "ObjectParameter". neter" parameter.
Computation Para	meters				
C3 Ø O Query = IRM - All D ObjectParameter =		mendations			
Test Computation					

8.3.2. Time to Failure Notification

A new email notification is available in the Notifications property page of a Key Indicator. It allows to trigger an automatic notification to a predefined list of users (list "Notified Users") whenever the Time to Failure is smaller than a user-defined number of days.

My Key Indicator	×
📺 Notifications 🗸	
The following notification can be sent to the person responsible to provide t frequency defined by the indicator Measurement Frequency.	he Key Indicator measurements with a
□ Send periodic notification to get value from IMPERIALI Michele	>
The following notifications can be sent to a pre-defined list of users. Please	specify users in the section below.
Send notification when Indicator status changes to	~
Send notification when last measurement is older than 90	🗘 day(s)
Send notification when the time to failure is less than 90	day(s)
Notified Persons	
e Connect	T
Name †	E-mail
C & IMPERIALI Michele	mimperiali@mega.com



Figure 43 - Indicators menu for IRM Contributors

8.3.3. Key Risk Indicators – #CP4

A link to risks has been added, along with a list of risks connected to the Key Indicator

🖄 Nr of Tickets								
Characteristics Values Notifications I	ndicator Graph Ac	tion Plans	Activity Feed					
Solution Status Status No Values Last Measurement	Unknown Time to Failure	1						
✓ Overview								
✓ Advanced								
✓ Scope								
∧ Risks								
Name 1	Code Major Risk	Entity	Last Assessment	Inherent Risk	Residual Ri	Open Incidents	Forecast Risk	Action Plans
High Application Unavailability	IT-001	France	9/9/2022	Medium	S Low		2 Low	1
≪ < Page 1 of 1 > ≫ 2	Show 50 🗘 ele	ements						

Figure 42 - Key Indicators Characteristics: Risks

8.3.4. Key Indicators for IRM Contributor

A new menu "Indicators" has been added to the IRM Contributor desktop, under Tasks, to let the user access to all Key Indicators he/she is in charge for.

HOPEX	
Home	<
•	
6 Home	
Dashboard	
Bold BI Dashb	
	Tasks
Tasks	Questionnaires
Environment	Execution Checklists
\wedge	O Business Continuity
Risks	indicators
<u> <u> <u> </u> <u> </u> <u> </u> Controls </u> </u>	Action Plans
÷	Recommendations
Incidents	o Actions
	The second s

From this menu the user can access to all indicators where he/she is defined as the "Value Provider".

8.3.5. Reports

All standard Key Indicator reports have been enriched with two additional date parameters (Value Start and End Date), to filter the indicator values considered by the report.



Figure 44 - Key Indicator report

8.4. IT Compliance

HOPEX IRM now provides a dedicated template to carry out control assessments starting from a list of applicable regulations, and a set of ready to use reports, in order to fully address the concerns of Compliance Officers and CISOs, helping them demonstrate compliance to applicable regulations, and ensuring IT assets are duly secured.

The new Assessment Template, called "Control Assessment by Entity and Regulatory Framework", allows to carry out an assessment of controls in the context of applications and processes of an entity impacted by a given regulatory framework.

The template is available from two entry points:

- Control Assessment Campaign
- Direct Multiple Control Assessment

Once the user selects the new template, the wizard allows to specify the scope of the assessment, i.e. the entity and the regulatory framework.

Based on the selected parameters, the assessment will include all controls linked to a control directive which belongs to the selected regulation framework, and which impact:

- A process linked directly or via a hierarchy of processes to the selected entity,
- An application which is linked to a process which in turn is linked directly or via a hierarchy of processes to the selected entity.



Figure 45 - Report Regulatory Framework Implementation

8.4.1. Reports

Several new reports have been delivered to help compliance officers and the different stakeholders monitor various compliance indicators.

They are listed under the menu Analysis>Compliance: Regulatory Framework Implementation, Regulatory Compliance Overview, Compliance by Regulatory Framework, Regulatory Compliance by Entity, Regulatory Compliance Progress.

Moreover, a new report "Failed Controls" has been added to the menu Analysis>Controls>Follow-up, and the report "Issues by Impact" has been added to the menu Analysis>Controls>Remediation.

8.4.1.1. Report Regulatory Framework Implementation

This stacked bar chart report displays the overall implementation of one or more regulatory frameworks. A regulatory framework is considered as "implemented" if all its mandatory control directives have an associated control.

It accepts as parameter one or more regulatory frameworks, and it displays for each one a stacked bar chart with the percentage of mandated control directives with an associated control.



8.4.1.2. Report Regulatory Compliance Overview

This table report displays the compliance details with respect to a given regulatory framework. In particular, the report provides the following info:

- Regulatory framework and its effective date
- Compliance and implementation %
- Implemented controls, their control level and last assessment date
- Existing control issues



Figure 49 - Report Compliance Sympliansco Aversinework

• Existing action plans, together with info regarding plan progress, status and forecast cost

								-		-	
Regulatory Framework	Effective Date	Compliance %	Implementation %	Implementing Control	Control Level	Last Assessment	Issue	Action Plan	Action Plan Completion	Action Plan Status	Action Plan Cost
		Access Controls to ERP are reviewed each quarter	Pass	8/19/2015							
EU General Data Protection Regulation	4/27/2016	25.0%	75.0%	Accounts Reconciliation Regarding Invoices	Not Assessed						
(GDPR)				Badge control	Fail	8/14/2014					
				All keys must be stored in a secured location	Fail	8/19/2015	Issue-	Action Plan- sid		On Time	0.0

8.4.1.3. Report Compliance by Regulatory Framework

This stacked bar chart report displays the overall compliance level with respect to one or more regulatory frameworks.

It accepts as parameter one or more regulatory frameworks, and it displays for each one a stacked bar chart with the percentage of controls associated to the control directives, grouped by their assessment level, as follows:

Pass – These are the controls with aggregated control level equal to 100%
Fail – These are the with aggregated control level less than 100%
Not Assessed – These are the controls with aggregated control level empty

This report is also available as a dashboard widget.




8.4.1.4. Report Regulatory Compliance by Entity

This aggregation report provides an overview of the compliance level of a given entity with respect to all applicable regulatory frameworks.

It accepts as parameter an entity to display the average compliance level to applicable regulations.

The report displays a tree with all the selected entity processes and applications for which a control linked to existing regulations has been assessed.



Figure 48 - Report Regulatory Compliance by Entity

8.4.1.5. Report Regulatory Compliance Progress

This radar chart shows the evolution over time of the compliance level of a given entity with respect to a given set of regulations.

The report has three mandatory parameters:



- Entities This defines the organization whose compliance level shall be shown
- **Regulatory frameworks** These are the regulations to include in the chart
- **Observation periods** These are the time intervals that will be used to observe the evolution of the compliance level over time.



8.4.1.6. Report Failed Controls

This report is a bar chart which shows the number of failed controls with respect to a given list of processes or applications.

The report parameters allow to:

- 1. Define a start and end date to filter the controls to be included in the chart, based on their creation date
- 2. Select the processes or applications to include in the report



Figure 50 - Assets failed controls Figure 51 - Report Issues by Impact



8.4.1.7. Report Issues by Impact

This report is a pie chart which groups existing issues by their impact.

It is possible to filter this report by issue status and the type of control impacted by the issue, for example to focus only on issues impacting on IT controls.



8.4.2. Policy Frameworks

HOPEX users can now also manage Policy Frameworks, that is any internal document the company should comply with. Policy Frameworks are made of Policy Framework Sections and Business Policies which constitute the elementary requirements the company shall comply with.

New Policy Frameworks can be created from the menu Environment>Compliance>Policy Frameworks.

Figure 52 - Create new Policy Frameworks

• Policy Frameworks represent internal documents issued by the Organiz measures and similar.	ration, such as code of conducts,	standard security
ew	Se	arch Q
		Policy Children
Given Strategy Strate	+ 🛛 🖧 🖻 🗹 😫	3
Section 1		1
🖬 😥 Business Policy 1.1		0
Section 2		0
Section 3		0

At every level of the policy framework, it is possible to define elements of the organizations which are affected by it, such as entities, processes and/or applications.

The approach around policy frameworks is dual with respect to the Regulatory Figure 53 - IRM Contributor desktop

Frameworks: in order to implement a business policy, the organization must associate a specific control to it, via the section Enforcement.

Once applicable policy frameworks are created in the HOPEX library, compliance professionals can access them, via two menus:

- 3. Environment>Compliance>All Business Policies, which displays a flat list of all existing business policies the organization shall comply with,
- 4. Environment>Compliance>By Policy Framework which displays the hierarchy of existing policy frameworks.

8.4.3. Compliance and Internal Audit

Audit directors can now access to the compliance menus, such as Environment>Compliance and Libraries>Compliance.

These menus give them access to the entire list of regulations and policies the organization must comply with.

8.5. IRM Contributor

8.5.1. Desktop

MEGA

IRM Contributor desktop has been completely redesigned, and it now provides a UX similar to the main users one. Among the most important improvements, this new desktop no longer provides the Edit/Browse mode.



8.5.2. Main Lists

MEGA

The main list views of the IRM Contributor desktop have been reviewed to ensure the user has access to all elements that he/she might be involved in.

Environment>Business Processes

The query which populates this list now retrieves:

1) All Business Processes where the current user has a business role

2) All Business Processes which are in the context of an Assessment Node, regardless the Assessed Object, where the Assessment Signatory contains the current user

3) All Business Processes linked to an Org-Unit where the user has a business role

Environment>Organizational Processes

Same approach as for Business Processes

Environment>Entities

The query which populates this list now retrieves:

1) All Org-Units where the current user has a business role

2) All Org-Units which are in the context of an Assessment Node, regardless the Assessed Object, where the Assessment Signatory contains the current user

3) All Org-Units which are assigned as location for a given localized business role (e.g. a user being Risk Assessor for Risk RK1 with respect to Org-Unit OR1)

Environment>Applications

The query which populates this list now retrieves:

1) All Applications where the current user has a business role



2) All Applications which are in the context of an Assessment Node, regardless the Assessed Object, where the Assessment Signatory contains the current user

Environment>Business Lines

The query which populates this list now retrieves:

1) All Business Lines which are in the context of an Assessment Node, regardless the Assessed Object, where the Assessment Signatory contains the current user

2) All Business Lines linked to an Org-Unit where the user has a business role

Risks

The query which populates this list now retrieves:

1) All Risks where the current user has a business role

2) All Risks which are in the scope of any of the elements of my environment

Controls

The query which populates this list now retrieves:

- 1) All Controls where the current user has a business role
- 2) All Controls which are in the scope of any of the elements of my environment

Incidents

The query which populates this list now retrieves:

- 1) All Incidents where the current user has a business role
- 2) All Incidents in the scope of any element of my environment

8.6. Managing Assessment and Execution Campaigns

The wizard to create and schedule Assessment and Execution Campaigns has been completely reviewed.

It is now also possible to define reminders on control checklists.

8.6.1. Autocompletion removed in Control Execution

Given the automatic nature of Control Execution, autocompletion has been deactivated to avoid checklists to be filled even if the owner has never opened it.



Figure 54 – Assessment Campaign wizard: select type of Assessment Campaign

8.6.2. Choosing Assessment Campaign Type

When creating an Assessment Campaign, the user is prompted with a wizard whose first step allows to specify what type of campaign the user wants to create⁶. Options are:

Risk Assessment Control Assessment

Creation of Assessment Campa	algn				2 ×			
Please specify the kind of assessment campaign you want to create.								
Risk Assessment	Control Assessment							
Assess your organization risk exposure by evaluating risk likelihood and impact.	Assess your organization control level by evaluating their design and effectiveness.							
			D ₂					
				Previous	S Next OK Cancel			

8.6.3. Selecting Assessment Template for the Campaign

Once the user selects the preferred option, the next step allows to specify the Assessment Template and a few additional parameters⁷.

If the user does not want to specify a template at this stage, he/she can do so, and specify the preferred template when creating the campaign sessions.

⁶ In case of Execution Campaigns, since the only option is to execute controls, the user is not prompted with this introductory step.

⁷ This step only proposes Assessment Template which have been defined for the object selected at the previous step.

Figure 55 – Assessment Campaign Wizard: select Assessment Template

Campaign Properties				×
Name* Campaign-02				
Template Control Assessment				
Calendar* 2021				
Begin Date* 9/28/2021	End Date* 12/31/2021	曲		
			Previous Next OK Cance	el

8.6.4. Defining Campaign Scope

The step to define the Assessment scope has also been reviewed. The proposed improvements also affect the wizard used when carrying out a Direct Multiple Assessment.

Only for execution campaigns...

MEGA

This step is available only if at the previous step of the wizard the user chooses "yes" for the field "Specify campaign scope via a tree".

Defining the campaign scope via a tree provides greatest granularity if the user wants to have the liberty to select control by control which ones to include in the execution campaign and which ones to exclude.

However, using this option new controls that are eventually added to the repository during an ongoing campaign, will not be automatically included in it. If this is a required functionality, the user should select "no" for the field "Specify campaign scope via a tree".

At this moment, the wizard will prompt the user to specify the root entity for the campaign and will automatically collect all controls which are in scope for the selected entity.

The tree to define the campaign scope now also includes informative columns which help the user select the risks or controls that should be included in the assessment.

For risks, the following information is provided:

Assessment Freshness Net Risk Open Incidents



Forecast Risk

For controls, the following information is provided:

Assessment Freshness (only in case of control assessment) Open Issues Aggregated Pass Control Level (only in case of control assessment) Aggregated Execution Level (only in case of control execution)

Figure 56 - Campaign Wizard: scope selection

Select Assessed Objects				3
Please select all Risks to be assessed				
Select parents and sub-elements SExpand the selected items				
E Search Q				
	Assessment Freshness	Net Risk	Open Incidents	Forecast Risk
🗖 🗋 👗 MyCompanya				
🖬 🔲 🔥 Corporate Headquarters				
🗖 🗋 👗 Subsidiaries				
Elgium				
Budget overrun	44 months	Medium	0	None
D 🛦 Burried substances	None	None	0	None
Change risk	61.5 months	Low	0	None
🗋 🔺 Contractual risk	None	None	0	None
Data encryption	61.5 months	None	0	None
□ 🛕 Insufficient budget	66.5 months	None	0	None

8.6.5. Campaign Overview Report

The campaign summary report has also been completely reviewed.

An overview table, displayed at the beginning of the report, highlights possible warnings that could prevent the campaign from working as expected.

Warnings can be of three types:

- No available respondent for a given risk/control to assess
- No available email for a given respondent
- No steering calendar for a control⁸

⁸ Only applicable to control execution campaigns



Figure 57 - Campaign summary report Figninger 15:958 CaCapapapagings uson many meperptortrons trees in gondaleth daar miagning

Additional information is also provided, such as:

Assessed Objects - The total number of objects that will be assessed9

Assessment Contexts – The total number of contexts involved in the assessment (e.g. entities, processes, applications...)

Respondents – The total number of people involved in the assessment

The table which follows, called "Contexts", provides full details regarding the Assessment Contexts.

Campaign Summary				2 ×
 Please find below a summary of your campaign. Pay attention to existing warnings which could prevent your Campaign from working as expected. 				
				0 1
Overview				
Total Warnings		X 3		
Assessed Objects		15		
Assessment Contexts		5		
Respondents	υg	9		
Contexts (5)				
4 EU General Data Protection Regulation (GDPR) 🕨 🖗 Accept the attestation engagement when all preconditions are met. 🕨 🝙	Needs			
掛 EU General Data Protection Regulation (GDPR) 🕨 💮 Accept only trusted keys and/or certificates. 🕨 📾 Process And Record Inv	voices			
掛 EU General Data Protection Regulation (GDPR) 🕨 💮 Accept only trusted keys and/or certificates. 🍃 📲 Account Management				
🎄 EU General Data Protection Regulation (GDPR) 🕨 💮 Accept the attestation engagement when all preconditions are met. 🕨 🝙	Accounts payable			
			Previous Next	OK Cancel

Respondents (10)		
Name	E-mail	Workload
A Rafael	webeval@mega.com	2
A Stacy	webeval@mega.com	2
Alex Alex	× No email	1

Furthermore, a table "Assessed Objects" provides a detailed view of all objects about to be assessed, with inline warnings in case of no respondent or, for control execution campaigns, no steering calendar.

Assessed Object	Assessed Objects (1)									
Name	Respondent	Contexts	Last Assessment	Aggregated Pass Control Level	Open Issues	Execution Frequency				
2 Control_SKI - 1	A IBNOUELBALAD Soukaina	OrgUnit_SKIP > BusinessProcess_SKI - 1 - 1	Unknown	Unknown	0	X No execution frequency				

⁹ A risk/control assessed in two different contexts is counted twice



8.6.6. Campaign statistics review – #CP4

The report shown when creating a Campaign has been improved for better readability.

Overview												
otal Warnings	0											
ssessed Objects	16											
ssessment Contexts	7											
espondents	1											
Context (7)												
MyCompany ≻ Subsidia MyCompany ≻ Subsidia MyCompany ≻ Subsidia MyCompany ≻ Subsidia Respondents (1)	rries ➤ 📥 France ➤ 📾 Develop a rries ➤ 🌰 France ➤ 📾 Develop a rries ➤ 🌰 France ➤ 📾 Develop a	nd Manage Human Capital ➤ (m) H nd Manage Human Capital ➤ (m) M nd Manage Human Capital ➤ (m) M nd Manage Human Capital ➤ (m) R nd Manage Human Capital ➤ (m) R	lanage Skills and lanage HR Admir liring Process >	I Competences nistration and Payroll > 😠 Ma n Hiring Process								
Name		E-mail						Worklo	ad			
A Simon		webeval@mega.com						16				
Assessed Objects (16)												
lame	Responder	nt Context							Last Assessment	Residual Risk	Open Incidents	Forecast Risk
Bad Definition of Agency N	letwork A _e Simon	MyCompany > Subsidiarie	IS France	► Develop and Manage I Capital	iuman 🕨 🗑 Hiring Process	► Process	► Applicant Screening		Unknown	Unknown	0	Unknown

Figure 60 - Campaign Summary

8.6.7. Campaign Planning

The last step of the wizard allows to schedule the campaign and send the assessment questionnaires. Three options are available:

Not Now – No questionnaires are created and/or sent. The user will have to manually create a session within the campaign, specify its scope and schedule when the questionnaires shall be generated and sent.

Immediately – Questionnaires are created and sent immediately after the wizard is closed. Using this option, the wizard automatically creates one assessment session which includes the entire campaign scope. This option is not recommended in case of high data volumes. If the campaign overview report contains errors that were not fixed, the wizard will not allow to select this option.

Specific Time and Date – This is the recommended option. It works similarly to the "Immediately" option, although questionnaires are created and sent at the specified time and date. If the campaign overview report contains errors that were not fixed, the wizard will not allow to select this option.

After confirmation of this last step, the campaign is officially launched and moved into "In Progress" status.

Figure 61 - Campaign planning

Campaign Planning		2 ×
o If you are happy with your Campaign configuration, you can plan the sending of the Assessed on the data volume, this process can take some time, unless strictly necessary, you	ment Questionnaires. are advised to cl _i cose the option "Specific Time and Date"	
• Your Questionnaires will be sent to the predefined respondents at the specified time and du	ite.	
Send Questionnaires: Not Now Immediately Specific Time and Date	Set Time	
		Previous Next OK Cancel

8.6.8. Define checklist reminders and sessions early closure

HOPEX now allows to define automatic email reminders on control execution checklists and early closure dates for sessions that must be closed before the creation of the next one.

The reminders are sent to checklist respondents.

Both reminders and early closure' settings can be defined on any steering calendar.

Two types of reminders can be set on any given steering calendar:

Reminder sent X days after the checklist creation Reminder sent X days before automatic session closure

For each type, the user can specify as many reminders as required, simply specifying the number of days (comma separated).

This parametrization must be done in the properties of each Steering Calendar, in the page "Texts", under "_Parametrization".

The syntax to be used is the following:

[QuestionnaireReminders] AfterSessionCreationDate=15 BeforeSessionEndDate=1,7 CloseAfter=25

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In the example described above, a reminder will be sent to the checklist respondents:

- 1. 15 days after the checklists were sent out
- 2. 7 days and 1 day before the checklists will be automatically closed

And the session of execution checklists will be closed after 25 days.

Figure 62 - Define reminders on control steering calendar

Figure 63 - Define reminders and early closure date for control execution checklists

MEGA



From an ongoing campaign, the default settings can be overridden specifying custom settings for each steering calendar used by the controls executed within the campaign.

^	Checklist Reminders and Early Closure Dates										
6	You can use the table below to setup email reminders for your control execution checklists, based on their steering calendars. You can define as many reminders as you like, using a comma separated notation. For example, if you want to setup two reminders to be sent one and two weeks after the submission of the control execution checklist, fill the second column of the table with "7,14". You can also define an early closure for specific steering calendars, so that its checklists are not left open for too long.										
	Steering Calendar 🕇	Days after check	Days before che	Close after (day							
C	Internal Control - Monthly Execution Campain	15	1,7	5							
					l≽						

Figure 64 - Execution campaign steering calendars details

8.6.9. Execution Campaign GANTT Report

The GANTT report of control execution campaigns has been enriched with a table which provides information on all the campaign steering calendars, their associated controls and the time and date of the next execution.

Figure 65 - Access questionnaires/checklists answers from within a campaign

Calendars			^
Name 🕇	Controls	Job Status	Next Execution (UTC) 1
Internal Control - Daily Execution Campaign	1	Scheduled	2021/06/23 03:00:00
Internal Control - Monthly Execution Campain	1	Scheduled	2021/07/01 03:00:00

Furthermore, the existing GANTT chart, now also displays not only the current and past controls execution sessions, but also the future ones, thus providing an overall view of the entire campaign schedule.

8.6.10. Assessment Campaign Results

Accessing the results of an ongoing campaign (either assessment or execution) has never been easier. Every campaign is now equipped with a dedicated Results page which displays the answers of all questionnaires/checklists which have been closed.

HOPE	X ≓ Select an object type ∨	Find object 🔸 🔍 🖌 🗸					←∼ ⊳ ∼				
Ho	Home / Assessment / Campaigns / Campaign-02 🗲 Back										
»	🐨 Campaign-02										
â	Characteristics Sessions Ca	mpaign Summary Gantt Result	s Activity Feed	Workflows							
ର	🕲 Instant Report										
ŶĒ	Assessed Object 🛛 Excel	Assessment Context	Respondent	Completion Date	Control Level	Impact	Likelihood				
	🔨 🔺 Invoice paid twice	Billing	VERDIER Olivier	11/15/2021	Frequent obse	Very Low	Likely				
	🔨 🔺 Purchase not financially validated	Billing	VERDIER Olivier	11/15/2021	Ineffective	High	Possible				

8.7. Controls Checklists Autocompletion

Whenever a user receives a control checklist, if the control was already executed in the past, the checklist questions are automatically prefilled with the answers that were provided the last time. The user can either change these answers or modify them before submitting the questionnaire.

8.7.1. Autocompletion removed in Control Execution – #CP4

Given the automatic nature of Control Execution, autocompletion has been deactivated to avoid checklists to be filled even if the owner has never opened it.

8.8. Automatic computation of Control Level on Risks

MEGA

HOPEX IRM now intelligently prefills the "Control Level" question within a Risk Assessment questionnaire, based on available information on controls mitigating the risk.

8.8.1. **Prerequisites for the automatic computation**

When assessing a given risk, for the control level question to be prefilled, the following pre-requisites must be met:

- The risk is mitigated by one or more controls
- The controls have been previously assessed, and thus their "Aggregated Control Level" is not empty

The following infographic further illustrates the scenario of automatic computation of Figure 66 - Automatic computation of control level on risks

the control level within a given risk assessment.



8.8.2. Computation Algorithm

The control level on the risk is computed following the pseudo algorithm described below:

- Total number of failed controls, multiplied by 25, divided by the total number of controls, rounded up to the biggest integer (e.g., 8.2 = 9). The obtained value is called Averaged Controls Level.
- The risk control level is computed considering the one which has the internal value which is closest to the averaged controls level.
- In case of two different control levels with equally distant internal values, the algorithm selects the smallest.

The following infographic displays the internal values used by the algorithm to carry out the computation.

Figuiger6867Examperte ad fvadures ou see eby coop to taltibe vehad gosk thm

Figure 69 - New control level labels

Control Loval	Control Lovel Tatornal Value
Pass	Pass 1
Fail	Fail 0
C	Control - Control
Pass Fail	

Risk - Control Level

MEGA

The following infographic provides an example of how the new algorithm works.

Control	Aggr. Control Level	Control Level Value
C1	90%	1
C2	45%	0
C3	0%	0

- Averaged Control Level = (3-1)*25/3 = 16,6 -> 17
- **Risk Control Level** = Ineffective (16)

8.8.3. New Labels

The control level labels have been reviewed as follows.

Control Level	New Label EN	New Label FR
Very Strong	Effective	Efficace
Strong	Few observations	Perfectible
Medium	Frequent Observations	Peu Efficace
Weak	Ineffective	Inefficace
Very Weak	Inexistent	Inexistant

8.9. Assessment Templates Improvements

8.9.1. Control/Risk Questionnaire Respondent

The logic to identify the respondent of assessment questionnaires and execution checklists has been fully revisited, in order to provide greater flexibility to the end users.

Figure 70 - Control questionnaire respondent

8.9.1.1. Control Assessments and Execution Campaigns

For the standard assessment templates "Control Assessment" and "Control Execution" the respondent of a control questionnaire can be defined in 5 different ways, as illustrated in the graphic below.

Starting from the right-hand side, as soon as the algorithm finds a match, it uses it to define the control questionnaire respondent.



For the standard assessment template "Control Assessment by Entity and Regulatory Framework" the respondent of a control questionnaire can be defined in 4 different ways, as illustrated in the graphic below.

This logic only applies for controls linked to applications while, for controls linked to processes, the standard logic applies.

Starting from the top, as soon as the algorithm finds a match, it uses it to define the control questionnaire respondent.



Figure 71 - Control questionnaire respondent



Figure 72 - Risk questionnaire respondent

8.9.1.2. Risk Assessment Campaigns

Using the same approach of the control assessment campaigns, also the assessment templates on risks have been reviewed. The respondent of a risk questionnaire can now be defined in 5 different ways, as illustrated in the graphic below.

Starting from the right-hand side, as soon as the algorithm finds a match, it uses it to define the risk questionnaire respondent.



8.9.2. Controls proposed in Campaign scope definition

tree

MEGA

In the following templates: "Control Assessment" and "Control Execution", the tree used to select the Controls to include in the campaign now also includes controls linked to a risk which is in turn linked to the business/organizational process, or to the entity.

8.9.3. Assessed Characteristics and Scoring Rules

Both wizards and property pages of assessed characteristics and scoring rules have been completely redesigned in order to provide better guidance for users defining their own assessment templates.

8.10. Internal Audit

Several enhancements have been made for the Internal Audit solution, many concerning the overall UX and other focused on strengthening the linkage with the other IRM modules.

A new Audit page has been added to the properties of a Risk to provide evidence of all Recommendations issued by the audit team.

▲ *Risk of non-	payment									
Characteristics	Assessment	Audit	Mitigatio	n Incidents	Action Plans	Reporting	Activity Feed	Workflows		
Name 1				Status		Priority			Due Date	Owner
🗆 🛎 Accounting cor	Accounting compliant with 262 regulation			To be submitted		Medi	Medium			Henri
🗆 🛎 Create a new p	procedure for stoc	k shortages		Action plan to be su	ıbmitted	High	High			

Figure 73 - Audit recommendations for a risk

8.10.1. Excel Import – #CP4

The IRM import template is now available to Audit profiles.

8.10.2. Menu and WET – #CP4

8.10.2.1. Menu restructuring

The third levels have been replaced by tabs:

- Audit > Execution
- Audit > Remediation

8.10.2.2. Columns added to lists

Columns containing information on:

- Audit Progress
- Number of Audit Recommendations

Have been added in the following lists:

- Audit>Execution>Ongoing Audits, Other Audits
- My Task>Audit>Past Audits

8.10.3. Audit Workflow – #CP4

In the Audit workflow, when validating closing report, a condition has been added to check that all the audit activities linked to the audit are in status To be validated or Validated. The message has been changed to better reflect this condition.

Also, when sending out the closing report and recommendations, the message in the condition has changed: From Recommendation Responsible to Recommendation Owner to reflect the naming used in the properties of a recommendation.

8.10.4. Recommendation Workflow – #CP4

A new status "*Rejected*" has been created in the Recommendation workflow to record also rejected Recommendations.

Check the on-line documentation <u>here</u> for more details.

8.11. Wizards and Property Pages

Specific wizards have been implemented for main IRM objects, to collect few basic information at object creation time. This includes risk, control, incident, issue, action plan, finding and recommendation.

Figure	74 -	Risk	creation	wizard
--------	------	------	----------	--------

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Creation of Risk	2 ×
Name*	
Identification Mode	
Description	
[] Default font ♥ B I U T T I ▼ II ▼ II ▼	=
OK	Cancel

Furthermore, the layout of the property page of main objects has also been reviewed. Fields are better distributed across the available space, and dedicated pages have been created to provide a more direct access to GRC-specific concepts, such as risks, controls, incidents, issues and action plans.

🔥 MyCompany							
Characteristics Ri	isks Controls	Incidents Action Plans	Reporting 🗸	Activity Feed	Workflows		
∧ Characteristics							
Name MyCompany						C	Code
Parent Entity						>	Status
Entity Type			Internal/External			I	Level
🚠 Structure			🔒 Internal Entity				
Description							
Default font	▼ B I	<u>U</u> T T <u>T</u> V	↓ ± ± ±	Ø i≡ i≡	© § %		

In some cases, like for audit and action plan meta-classes, new indicator dashboards have been designed.





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8.11.1. Organizational Processes – #CP4

8.11.1.1. Operations added to Organizational Process

œ	Issue Purcha	ase Order								
	Characteristics	Risks	Controls	Incidents	Action Plans	Reporting 🗸	Activity Feed	Workflows		
,	✓ Characteristic	5								
	Sub-Processes	and Operation	ations							
	Processes	🗌 Ope	rations							
	🕣 New 🐚 F	Reorganize	🖹 Instant I	Report						т
	Name 🕇			Operatio	n-Code					
	Activate Purch	ase Requisiti	ion Follow-Up							
	Define condition	ons of delive	ries							
	Fill in the order	er form								
	Finalize and Is	sue Purchas	e Order							
	Launch Purcha	ase Order								
	< < Page	e 1 0	f1 > >>	C Show	50 🗘 eler	nents				Displaying 1 - 5 of 5

Figure 75 - Organizational Process Characteristics: Sub-processes and Operations

The list of operations connected to an organizational Process has been added to its property page.

8.11.2. Action Plans – #CP4

8.11.2.1. Progress History

Elements in the list will be sorted by decreasing "Progress Date".

Also the wizard to create the progress will prevent the selection of a future date, while the field "Progress (percentage)" will be initialized with the last available progress value.



Figure 76 - Action Plan Characteristics: Progress History



8.11.3. Audit Plans – #CP4

The column Progress has been added to the Audits list.

Home / Search results /	Home / Search results / Audit Plan 2014 🗧 🗲 Back										
D Audit Plan 2014											
Characteristics Audits	Schedule A	ssign Resources	Recommendations	Reports 🗸 Activit							
↔ New											
Name †		Status	Progress 🗸 🗸	Evaluation R							
🔲 🗟 Subsidiary audit: Engla	nd 🖹 🗖 🗄	Potential	0%								
🔲 🗟 Subsidiary Audit: Italy		Potential	0%								
🔲 🗟 Subsidiary audit: Spain		Potential	0%								

Figure 77 - Audit Plan Audits

8.11.4. Assessment Campaign – #CP4

The layout of the Characteristics property page has been reviewed.

Characteristics	Sessions	Gantt	Result	s Activity	Feed V	/orkflows	
Characteristics	;						
Name* 2013 - Risks asses	sment					Code ERM-2013	
Owner Jack					>	Status In Progress	
Calendar* 2013				Begin date 1/1/2013	餔	End date 12/31/2013	曲
Campaign Type Without Template							
Description	nt 🗸	BIL	<u>J</u> T	т" <u>т</u> 🗸			

Attachments

Figure 78 - Assessment Campaign Characteristics

8.11.5. Assessment Session – #CP4

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The layout of the Characteristics property page has been reviewed.

Characteristics S	Session Summary		itep of thig		ctivity Feed	1
Characteristics						
Name FRANCE & CANADA & IT/	ALY			Code		
Owner Jack			,	Status Closed		
Template		Questie				
Description		Questio	nnaire Template			
Description	V B I	<u>U</u> T* T*			= =	≡
Default font	• B I					=
Image: Default font Milestone Planned Begin Date*	Planned End Date	<u>U</u> T T				=
Default font	Planned End Date	<u>U</u> T. T.				=
Default font Milestone Planned Begin Date*	Planned End Date	<u>U</u> T. T. .* ⊞				=

Figure 79 - Assessment Session Characteristics

8.11.6. Questionnaire – #CP4

The layout of the Characteristics property page has been reviewed.

8.11.7. Questionnaire template – #CP4

The layout of the Characteristics property page has been reviewed.

8.11.8. Assessment template – #CP4

The layout of the Characteristics property page has been reviewed.

8.11.9. Gross Income – #CP4

The layout of the Characteristics property page has been reviewed.

8.11.10. Risk Type – #CP4

The layout of the Characteristics property page has been reviewed.

Some information has been added:

- Parent Risk Type
- Sub Risk Types
- Risk Factors.

Some new property pages have been added:



- Risks
- Incidents.

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Characteristics	Risks	Incidents	Reporting	~	Activity Feed		
 Characteristics 							
Name 2.1 Internal frauds						Code	
Parent Risk Type							>
Description							
C3 Default font		в I <u>U</u>	T T	<u> </u>	× • •	888	≡
✓ Sub Risk Types							
✓ Analysis							

Figure 80 - Risk Type Characteristics

8.11.11. Risk Factor – #CP4

The layout of the Characteristics property page has been reviewed.

Some information has been added:

- Parent Risk Factor
- Sub Risk Factors
- Risk Types.

Some new property pages have been added:

• Risks.

Characteristics	Risks	Activity	Activity Feed		
Characteristics					
Name		Code			
03_03 - physical assets and other infr	astructure				
Parent Risk Factor					
03 - linked to resources			>		
Description					
□ Default font V B	$I \underline{U} \mid T T \mid \underline{T} \checkmark$		≡		

✓ Analysis

Figure 81 - Risk Factor Characteristics

8.11.12. Risk Consequence – #CP4

The layout of the Characteristics property page has been reviewed.

Some information has been added:

- Parent Risk Consequence
- Sub Risk Consequences
- Risk Types.

Some new property pages have been added:

• Risks.

Characteristics	Risks	Activity Feed
∧ Characteristics		
Name* Access to confidential information		Code
Parent Risk Consequence		>
Description		
C Default font v B	<i>I</i> <u>U</u> T [*] T [*] <u>T</u> ∨	™ ∨ ≟ ≟ =
✓ Sub Risk Consequences		
✓ Analysis		

Figure 82 - Risk Consequences Characteristics

8.11.13. Control Type – #CP4

The layout of the Characteristics property page has been reviewed.

Some information has been added:

- Parent Control Type
- Sub Control Types.

Some new property pages have been added:

Characteristics	Controls	Reporting	Activity Feed
Characteristics			
Name A.06.2.2 Teleworking			Code ISO 27002:A.06.2.2
Parent Control Type A.06.2 Mobile devices and tel	eworking		>
Description] B <i>I</i> <u>U</u> T	Т <u>Т</u> ∨ П ∨	

Sub-Control Types

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Figure 83 - Control Type Characteristics

• Controls.

8.11.14. Business Documents – #CP4

Multi-selection has been added to the Version History property page.

A new command gives the possibility to update the current version with a new document.

	Characte	ristics		Versions History
🕀 New 🚺	Reorganize	Update current ve	ersio	ion
Name	t			Document Version
🗆 📲 Audit I	Report v1.docx		:	1
🗆 📲 Audit	Report v2.docx			2

Figure 84 - Business Document Versions History

Check the on-line documentation for more details:

<u>Common Features > Managing Documentation > Using Business Documents ></u> <u>Managing Business Documents</u>¹⁰.

¹⁰ To be able to view the documentation, you must login to the MEGA Community or to HOPEX.



8.11.15. Business Continuity Analysis Template – #CP4

Instant Report and Excel Export commands have been removed from the following lists:

- Impact Types
- Possible Values
- Downtime Periods
- Business Impacts Values.

The button to access the properties of Business Impact Values has been removed, along with the possibility to *Create* and *Delete* from this list. Only *Link* and *Unlink* are available.

8.11.16. "Group by" has been removed on some lists of objects – #CP4

The default grouping on the Status attribute has been removed, and a column with the Status added.

8.11.17. Candidate MetaTrees – #CP4

When connecting the following object, along with the usual Query Editor and Candidate Queries, Candidate MetaTrees have been added:

- Control Type
- Risk Type.

8.12. Reporting

8.12.1. Action Plan Progress Report – #CP4

It is now possible to close the chapters of this report (in the properties of Action Plans).

The line chart has been reviewed to implement large timeframes without any progress update and the legend has been removed.

8.12.2. Bow-tie analysis – #CP4

The bow-tie analysis report has been added to the reports available in the Reporting property page of the Risk.

8.12.3. Duplicated Controls report removed – #CP4

The duplicated controls report in the Reporting property page of Org-Units has been removed.

8.13. Regulation Frameworks Conversion Wizard

Only for existing clients.



A dedicated page, accessible via the IRM Functional Administration profile, under the menu Administration>Tools>Regulation Data Conversion, allows to launch the data conversion wizard, to convert existing regulation frameworks and requirements towards the new compliance concepts, introduced since V4CP1, following the integration of HOPEX IRM with UCF (i.e. Regulatory/Policy Frameworks, Regulation Sections and Policy Framework Sections, Regulation Articles and Business Policies, and Control Directives).



Figure 85 - Regulation Frameworks and Requirements conversion reports

The conversion process does not actually modify the original data, but simply creates new objects based on the new meta-model. This means that no data is lost, and users can always access to the old regulation frameworks and requirements if needed.

If the user environment contains data still to be converted, this page displays a button to launch the data conversion, and two reports show the percentage of existing regulation frameworks and requirements yet to be converted.

Important – For a Requirement to be converted, it is mandatory for it to belong to a regulation framework. Furthermore, a regulation framework which contains another regulation framework, can only be converted into an empty regulatory framework, since the new meta-model does not support hierarchies of regulatory frameworks.

Once the user clicks on the button "Launch Data Conversion" a one-step wizard allows to select the regulation frameworks to be converted. To specify if and how an existing regulation framework should be converted, the user is presented with a table which lists all regulation frameworks which have not yet been converted.

From this table the user must fill in the column "Convert Into" to select whether the regulation framework should be converted into a regulatory framework, a policy framework, or if it should not be converted.



A button "Apply Default Conversion Settings", when clicked, defines a standard

	he following table defines how your existing data is about to be converted. You can either apply the default conversion Convert Into" column, according to your requirements.	settings using the dedi	cated button, or manually fill in the
Арр	bly Default Conversion Settings		
D	Regulation Framework †	Requirements	Convert Into
	A.05 Information Security Policy	1	Do Not Convert
	A.06 Organisation of Information Security	2	Do Not Convert
	A.07 Human Resource Security	3	Do Not Convert
	A.08 Asset Management	3	Do Not Convert
	A.09 Logical Security / Access Control	4	Do Not Convert
	A.10 Cryptography	1	Do Not Convert
	A.11 Physical and environmental Security	2	Do Not Convert
	A.12 Operations Security	7	Do Not Convert
	A.13 Communications Security	2	Do Not Convert
	A.14 System acquisition, development and maintenance	3	Do Not Convert
	A.15 Supplier relationships	2	Do Not Convert
	A.16 Information Security Incident Management	1	Do Not Convert
	A.17 Business Continuity	2	Do Not Convert
	A.18 Compliance	2	Do Not Convert

Figure 86 - Regulation Frameworks and Requirements conversion wizard

conversion towards the new regulatory framework meta-class, for all existing regulation frameworks.

8.13.1. Message before converting – #CP4

A new message has been added before launching the conversion to recap the number of elements impacted by the conversion.

8.13.2. Conversion algorithm

When converting a regulation framework, the following happens:

Based on whether the conversion is towards a regulatory or policy framework, a new regulatory/policy framework is created, with the same name of the original regulation framework

Several regulation articles/business policies are created, one for every requirement of the original regulation framework. The name of the regulation article/business policy is equal to the requirement it originated from

For every regulation article, also a control directive is created, with the same name of the regulation article. This is the concept which allows to create the link towards implementing controls.

The following infographic contains a graphical summary of the conversion logic.



The numbers in the above infographic mean the following:

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- 5. By default, for each regulation framework a regulatory framework with the same name is created
- 6. All applications, processes and org-units in the regulation framework scope, will appear within the regulatory framework Subjected Elements section
- 7. The meta-association Risks is not considered
- 8. For every requirement of the regulation framework a regulation article with the same name is created

For every requirement a control directive is also created, of type mandated, with name equal to the requirement name

All controls linked to the requirement will appear under the Implementation section of the newly created control directive

The meta-associations with risks & risk types are not considered

All applications, processes and org-units in the requirement scope will appear under the Subjected Elements section of the newly created regulation article

The meta-association Action Plans is not considered





The following table documents how the meta-attributes of a converted regulation framework are copied in the newly created regulatory framework.

Regulation Framework	Regulatory Framework
Code	Policy Code
Name	Name
Regulation Scope	DISCARDED
Regulation Date	Regulation Release Date
Application Begin Date	Effective Date
Application End Date	DISCARDED
Expiration Date	DISCARDED
Regulation Status	DISCARDED
Comment	Comment

Figure 88 - Regulation Framework meta-attributes conversion

The following table documents how the meta-attributes of a converted requirement are copied in the newly created regulation article.

8.14. IRM Business Roles

HOPEX IRM exploits a list of pre-defined business roles to:

- $_{\odot}$ Identify the respondents for risks and controls assessments and execution campaigns
- Specify users that are entitled to create incidents or validate them

Important – By default, only the IRM Functional Administrator profile has the right to

Requirement	Regulation Article
Requirement Nature	DISCARDED
Priority	DISCARDED
Expiration Date	DISCARDED
Issuer	DISCARDED
Code	Policy Code
Requirment Internal Status	DISCARDED
Requirment Official Status	DISCARDED
Type of Legislation Source	DISCARDED
Sanction Type	DISCARDED
Sanction	DISCARDED
Suggested Test	DISCARDED
Name**	Label
Comment	Comment

Figure 89 - Requirement meta-attributes conversion

edit these roles on the entity. All other profiles have only read rights.

Responsibilities			^
Risk Manager Risk A	Assessor Incident Appro	ver	
📀 New 📮 🛞 🗎	X		T
Name	User Email		
A IMPERIALI Michele	mimperiali@mega.com		
•			
K Yage 1 Of	1 > > 2 Show	50 🗘 elements Displa	ying 1 - 1 of 1

A new wizard to define the responsibility exposes a description for the selected business role, to better explain which are the role's responsibilities.

Figure 90 - New business responsibility wizard

Create New Responsibility	2 ×
Select a person*	
IMPERIALI Michele	~ >
Select a business role*	
Risk Manager	
The Risk Manager is responsible for execution of the following tasks on risks within responsibility domain: - identifying risks - direct assessment - assessment campaign management - action plan definition - analysis and follow-up report creation and debugging	his/her
	OK Cancel

8.14.1. Entity Responsibilities

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Among the business roles available within HOPEX IRM, there are some which are entitled to be defined at the entity level.

To help users define responsibilities for a given entity, a new section has been added to its properties. This section is called "Responsibilities" and it allows to define:

<u>Risk Managers</u> – Person(s) in charge for the management of risks impacting the entity.

<u>Risk Assessors</u> – Person(s) in charge for the assessments of risks impacting the entity¹¹.

<u>Control Assessors</u> – Person(s) in charge for the evaluation and execution of controls implemented in the context of the entity

<u>Incident Approvers</u> – Person(s) in charge for the approval of incidents affecting the entity.

<u>Incident Declarers</u> – Person(s) in charge for the creation of incidents within his/her scope.

8.14.2. Process Responsibilities

The section Responsibilities of both Organizational and Business Processes has been enriched with two additional Business Roles:

• <u>Risk Assessors</u> – Person(s) in charge for the assessments of risks impacting the process. It is possible to limit this role to a specific entity.

¹¹ This field was originally placed in the entity characteristics section, and it was technically called "Risk and Control Assessor"



 <u>Control Assessors</u> – Person(s) in charge for the evaluation and execution of controls implemented in the context of the process. It is possible to limit this role to a specific entity.

8.14.3. Control Responsible

The wizard allowing to define a Control Responsible on a Control has been reviewed to add a new field which allows to define the entity the person is responsible for.

The entity the person is control responsible for, is an information used when carrying out assessment or execution campaigns, to identify the person who should receive the assessment questionnaire or execution checklist.

Create New Responsibility	2	×
Select a person*		
IBNOUELBALAD Soukaina	~	>
Select a business role*		
Control Responsible		
 It is used to assign users to Controls in the context of the RACI structure: Responsible (R): for execution of required actions. Accountable (A): reporting on progress of planned actions and making decisions. There is one "Accountable". Consulted (C): first priority before an action or decision. Informed (I): must be informed after an action or decision. 	only	
Select the entity the person is responsible for*		
Wordl@Hand Supplier	~	>
OK (Cance	

8.15. Data Access Rules

The Data Access Rules on Risk, Control, Incident and Action Plan have been reviewed. All these rules apply only to the following profiles: IRM Contributor, Internal Controller, Auditor.

Risk Modification

Only the users with the following business roles can edit a Risk:

Risk Owner

- Risk Accountable
- Risk Responsible
- All users with a Risk Manager business role with respect to an Org-Unit which is directly, or indirectly (via a sub Org-Unit) linked to the Risk via its scope section

Control Modification

Only the users with the following business roles can edit a Control:

- Control Owner
- Control Accountable
- Control Responsible

Incident Visibility and Modification

If the Incident does not have an associated Entity, anybody can see it and edit it.

Otherwise, only the users with the following business roles can view and edit an Incident:

- Incident Declarer
- All users who hold either the business role Incident Approver or Risk Manager with respect to the Org-Unit linked to the Incident as "Declarant's Entity"

Action Plan Visibility

Only the users with the following business roles can see an Action Plan:

• All users holding a business role with respect to the Action Plan

Action Plan Modification

Only the users with the following business roles can edit an Action Plan:

- Action Plan Owner
- Action Plan Accountable
- Action Plan Responsible

Figure 92 - Review Notes

8.16. Other Modifications and Improvements

8.16.1. Review Notes

Review notes have been added to all main IRM objects. The full list being: Risk; Control; Issue; Incident; Action Plan; Action (Action Plan); Finding; Recommendation; Key Indicator; Organizational Process; Business Process; Application; Audit; Test; Audit Activity; Test Activity; BCM System; BIA; BCP; Business Continuity Step; BCP Instance; Business Continuity Step Instance; Crisis Management; Policy Framework; Policy Fr Figure 93 - Home page tiles

Section; Business Policy; Regulatory Framework; Regulation Section; Regulation Article; Control Directive; Objective.

HOPEX ≓ Select an object type ♥ Find object > Q ♥	tn×r>× Ø Autosaved ♠ ⑧ ⑦
Home / Libraries / Risks / All Risks / Invoice approved without valid 🗲 Back	
>> 🔺 Invoice approved without valid justification	Comments
Characteristics Assessment Mitigation Incidents Action Plar >	Invoice approved without valid justification
Define your risk management strategy and implement preventive, detective and corrective controls.	Rink
.a.	Add
Residual Risk Risk Appetite	Open/Validated Review Notes 😽
🗌 Acceptance 🛃 Reduction 📋 Transfer 📄 Insurance	N IMPERIALI Michele
Controls	©Adam can you complete the description of this risk please?
🛞 New 🕜 Connect 🗉 Instant Report 🚦 🛛 🝸	٠
Name T	Add
Control Associated to invoice (Invoice/AR/PO)	

8.16.2. Home Page Tiles

Default home page tiles for GRC profiles have been reviewed. New tiles have also been created, such as the "Reports" tile, allowing to quickly access to all reports, and the "Process-Risk-Control" tile, which leads to the tree structure of processes, risks and controls.



Figure 94 - Environmeiguneeo5vitRisikheethcopstrol data

8.16.3. Environment Trees

All trees under the menu Environment have been completely reviewed to provide in one single page information related to risks, controls and incidents.

Home	/ Environment / Organization / Processes / Car Rental Business 🗲 E	Back						Ţ
×								Search Q
		Risks	Controls	Last Assessment	Residual Risk	Forecast Risk	Execution Rate	Control Level
G Home	Support Process S	62	27					
ക	Counting	1	1					
Dashboard	Develop and Manage Human Capital B	12	2					
Bold BI Dashb	Develop and manage HR planning, policies, and str	0	0					
ôe	Hiring Process	6	0					
Ny Tasks	Manage employee information	0	0					
۹.	Manage HR Administration and Payroll &	1	1					
Environment	Manage Skills and Competences	3	2					
Registers	🖬 🔺 🛛 Bad Image Impact		0					
£	Budget overrun		0	7/3/2017	😑 Medium			
Assessment	🕒 🔺 Contractual risk		0					
	2 Control on special orders			1/21/2015			0%	100%
@ <u>#</u>	2 Segregation of duties			1/21/2015			0%	0%
Execution	Recruit, source, and select employees	5	0					

8.16.4. Risk Heatmaps

The axis of inherent and residual risk heatmaps have been inverted to be aligned with market standards.

1	Inherent Risk					
	-			. Impact —		
		Very Low	Low	Medium	High	Very High
	Certain	0	0	0	0	0
poo	Probable	0	0		0	0
Likelihood	Likely	0	0	0	0	0
Ē	Possible	0	0	0	0	0
	Rare	0	0	0	0	0
I F	Residual Risk					
I F	Residual Risk			Control Leve		
F	Residual Risk	Effective	Few observations	Control Level Frequent observations	Ineffective	Inexistent
 	R esidual Risk Very High	Effective		Frequent observations	Ineffective	
			observations	Frequent observations	Ineffective	0 (
	Very High	0	observations 0	Frequent observations	Ineffective 0	0 (C) 0 (C)
Inherent Risk —	Very High High	0	observations 0 0	Frequent observations	Ineffective Ineffective	0 (C) 0 (C)

8.16.5. Skip node creation in assessment aggregation

A new option "Skip node creation" is now available on the property page of an aggregation step. When this option is checked, the aggregation step will skip the creation of the related assessment nodes. It will simply carry out the computation on the entry nodes and provide the results to the next aggregation step.



Figure 96 - Residual Risk computation algorithm

Thanks to this option, it is now possible to gain a significant amount of time when executing the aggregation steps.

This option should only be used when there is no interest in exploiting in a report the results of the assessment nodes that are normally generated when executing the aggregation step. Furthermore, the option must never be used on the last aggregation step, otherwise it would prevent the generation of the assessment nodes holding the result of the overall aggregation.

Figure 97 - Assessed objects context in questionnaires layout

8.16.6. Residual risk computation algorithm

The algorithm which computes the residual risk, starting from inherent risk and control level has been reviewed has displayed in the image below.

×	25	Medium	Medium	High	High	Very High
E E	16	Low	Medium	Medium	High	High
NHERENT RISK	9	Low	Low	Medium	Medium	Medium
μű	4	Very Low	Low	Low	Low	Low
Ê	1	Very Low				
		1	4	. 9	16	25
			CC	NTROL LE	VEL	

8.16.7. Questionnaire instance layout

A new column displaying the context of a questionnaire assessment has been added to the list of assessed objects.

Furthermore, it is now possible to use filters on all of the existing columns.

Assessed Obje	cts	
Name 🕇	Status	Context
A Budget over	Not Started	MyCompany -> Subsidiaries -> Belgium
🔺 Data encryp	Not Started	MyCompany -> Subsidiaries -> Belgium

8.16.8. Questionnaire instance naming

The rule to automatically compute the name of the questionnaires has been updated as follows:

If questionnaires are created "by person": "[Campaign Name] - [Respondent]"

If questionnaires are created "by assessed object": "[Campaign Name] - [Respondent]: assessed object name"

If questionnaires are created "by context": "[Campaign Name] - [Respondent]: Context1>context2"



Figure 98 - Workflow email notification

8.16.9. Questionnaire instance Closure Date

A new field "Completion Date" is now available on questionnaire instances, providing the date at which the respondent completed the questionnaire.

8.16.10. Questionnaire Template property page

The scoring rules used by a questionnaire template are now listed within the section "Scoring Rules" in the property page Characteristics of the questionnaire template.

8.16.11. Workflow email notifications

All standard workflow email notifications have been reviewed and updated.

The content of the notification message has been made consistent throughout the solution and a new, modern HTML template is now used by the email messages.



8.16.12. Risk heatmaps

All standard risk heatmap reports have been reviewed to update their layout.



8.16.13. List views and meta-trees and columns

All main risk, controls and incidents list views and meta-trees have been reviewed to add additional columns and provide additional information readily available¹². When applicable, also the list in the objects' property pages have been enriched with additional columns.

Where possible, several alternate lists have been merged into one in order to provide a single-entry point to the list of objects. Starting form this list, the user can apply required filters on existing columns and obtain the desired filtered list of objects.

Furthermore, all meta-trees are now equipped with a contextual search to search elements within the tree.

¹² Some of these columns are hidden by default





8.16.14. Incident Creation Wizard

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The incident creation wizard which requires to enter the "Declarant's entity" has been improved as follows:

- If the user who creates the incident holds the business role of Incident Declarer with respect to one or more entities, this wizard will not be shown, and the incident will be created with field "Declarant's Entity" equal to the first entity among those for which the user is Incident Declarer
- If the user is not defined as Incident Declarer anywhere, HOPEX checks if he/she has at least a responsibility assignment with respect to an existing entity. If he/she has one or more responsibility assignments, the wizard will not be shown, and HOPEX uses the first one to initialize the field "Declarant's Entity"

8.16.15. Auditors Issued Recommendations

A new section has been added to the menu "My Tasks>Remediation>Recommendations to Implement", which provides the list of recommendations issued by the current user (i.e. those where he/she is the owner).

8.16.16. Test Sheets Management

It is now much easier and intuitive to create test sheets from within audit and test activities.

The page "Complete Test Sheet" accessible from either the audit or test activity is always displayed and provides a button via which the user can easily launch the generation of the test sheet. If a pre-requisite for the test sheet generation is not met, this page also shows a warning message to guide the user towards the resolution of the problem.

Ð	Formalization of delegations		: ×
	Characteristics	Complete Test Sheet	Activity Feed
i		complete the activity Test Sheet. In order to s ber of samples and a questionnaire on the aud	
B G	enerate Test Sheet		
0	Please make sure you have specified a	a questionnaire on the audit activity.	

Figure 101 - Generate test sheet

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8.16.17. Risk property page restructuring

The property page "Controls and Action Plans" of a risk, has been renamed into "Mitigation" and it now only displays the risk appetite together with the risk reduction strategy and the list of existing controls.

Action Plans and Incidents have been moved into separate pages: respectively "Action Plans" and "Incidents".

8.16.18. Control property page restructuring

The property pages of a control have been reviewed and layout improved.

In particular:

The list of risks linked to the control, originally displayed under the section Scope, is now displayed in a separate dedicated section Risks, which is right below.

The list of incidents linked to the control, originally displayed under the section Scope, is now displayed in a separate dedicated page Incidents

The page Action Plans now displays both action plans directly linked to the control and those which are linked to an issue linked to the control

A new reporting page is now available. Like with the risk, this page displays the control environment. It consists in a dendrogram displaying all main elements linked to the control Figure 102 - Control environment report

Figure 103 - Campaign questionnaires status distribution





8.16.19. Review Campaign Follow-up & Statistics report

The assessment campaign reports under the page "Report>Follow-up & Statistics" have been reviewed in order to improve layout and usability.

		Questionnaires					
*	In Progress	To Be Reassigned	Canceled	In Delegation	Closed	To Be Validated	To Be Sent
IBNOUELBALAD Soukaina	0	0	0	0	1	0	0
TOTAL	0	0	0	0	1	0	0

8.16.20. External references

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All main HOPEX IRM objects which were equipped with a section "Documents" to let users attach relevant documents, now also provide the option to add external references.





MEGA

MEGA

Figure 105 - Assign Test Activity Responsible

8.16.21. Assigning Responsible for Test Activity

Similarly to the Internal Audit, it is now possible to assign responsible to one or more test activities, directly for the list of activities displayed in the properties of a test.

Test - Purchasing Department 2013							
Characteristics Work Program Activities Issu							
🕣 New 📑 Reorganize 🛞 Remov	e 🔑 Assignment						
Name t	E						
Check that revenues and inputs	are allocated to						
Control on anticipated payments							

8.16.22. Various Renaming

The following renaming were introduced in this version:

The home page tile "All Business Processes" has been renamed into "Process Risk Control", and the "All Organizational Processes", which was pointing to the same page, has been removed

The profile "Incident and Losses Administrator" has been renamed into "Incident and Losses Manager" since its original name would easily lead to the misunderstanding that this role is a Functional Administrator while it is not (for example, he does not have access to the Administration section of HOPEX, and therefore he cannot manage users);

The risk meta-attribute "Net Risk" has been renamed into "Residual Risk"; Key Risks have been renamed into Major Risks;

Questions of type "Single Input" have been renamed into "Short Answer"; The menu Strategies, under Environment, has been renamed into Objectives; The meta-class "UCF Control Directive" has been renamed into "Control

Directive" since it is now used broadly when working with regulatory content, and not only in the context of the integration with UCF.

The field "Target Risk" displayed in various areas of the solution has been renamed into "Risk Appetite"

The RACI section contained in the property page of risks and action plans has been renamed into Responsibilities.

8.16.23. Questionnaires/checklists list views columns

The columns displayed on main campaigns and questionnaires/checklist list views have been reviewed in order to provide better insights to the users when browsing these lists.

Affected lists are to be found under:

- 2. My Tasks>Assessment
- 3. My Tasks>Execution



- 4. Assessment>Campaigns
- 5. Assessment>Follow-up
- 6. Execution>Campaigns
- 7. Execution>Follow-up

8.16.24. Action Plans Actions

It is now possible to have actions with the same name, as long as they belong to different action plans.

8.16.25. Menu structure modifications

The menus Assessment>Results and Execution>Results have been deleted since the same information is available via the reports accessible respectively through the menus Analysis>Controls>Assessment and Follow-up and Analysis>Controls>Execution.

Two tiles have been added to the menu My Tasks>Audit. Respectively:

Work Program, to access the user work program and the global work program, Past Audits, to display all the user past audits

The menus "Vacation Requests to Review" and "Expenses to Review", originally under My Tasks>Time & Expenses, have been moved within the section My Tasks>Review.

The menu "Libraries" has been renamed into "Registers" and it was partially reorganized to provide a better user experience and easier access to the main IRM concepts.

The Risks submenu now leads to one single page, displaying:

All Risks Orphan Risks Materialized Risks

Same approach has been followed for the Controls submenu, which now leads to one single page, displaying:

- All Controls
- Orphan Controls
- Controls by Incidents

Same approach has been followed for the Incidents submenu, which now leads to one single page, displaying:

Open Incidents All Incidents Orphan Incidents Macro Incidents

For the Action Plans submenu, the Action Plans by Scope tile has been removed, and the alternate lists "Delayed Action Plans", "My Action Plans" and "My Delayed Action Plans" have also been removed, since all the information is now made available through one single list of all action plans, which can be easily filtered using the dedicated columns.



For the Indicators submenu, the Indicators by Entities tile has been removed, since the same info is now made available through a dedicated column on the main Key Indicators list view.

8.16.26. Inline Edit

All main list and tree list views now provide the inline edit. For list views edit is possible on all columns which are not computed, while for trees the edit is mainly possible for the object's name.

8.16.27. Technical improvements – #CP4

The *mA9b3WwxH5bJ* java macro used for context in Direct Assessment has been reviewed and wrapped in another VB macro to easily manage custom context.

8.16.28. Menu and WET – #CP4

8.16.28.1. Environment menu reorganized

The list in Environment has been reordered as follows:

- Organization
- Risks
- Controls
- Compliance
- Documents
- Financial
- Objectives

8.16.28.2. Business Impact Values menu

A new menu has been created to manage Business Impacts Values in the Administration > Business Continuity menu.

8.16.29. UX improvements – #CP4

8.16.29.1. Alternate list

The old drop-down selection in the top of the lists in the following menus have been replaced with the new tab renderer:

- Assessment > Follow-up
- Execution > Follow-up

8.16.30. Repeated title in Questionnaires removed – #CP4

The repeated name of the assessed object in the top part of Questionnaires has been removed

8.17. Removed Features

8.17.1. Regulation Frameworks and Requirements

The menu of HOPEX IRM and HOPEX Explorer, together with existing property pages, have been reviewed to remove any reference to Regulation Frameworks and Requirements which are now replaced by the new meta-model (Regulatory Framework, Regulation Section, Regulation Article and Control Directives).

8.17.2. Control Systems

A new option has been added to the HOPEX options to hide control systems form HOPEX IRM.

The option is called "Control Systems activation" and it must be selected in order for control systems to be available in the solution.

8.17.3. Assessment Templates

The following Assessment Templates have been removed from the standard:

- Risk Assessment per Business Line
- Risk Assessment per Business Process
- Risk Assessment per Organizational Process
- Control Assessment per Application
- Direct Testing Assessment Template
- Indirect Testing Assessment Template
- Vendor Assessment

8.17.4. Business Roles

In order to further streamline HOPEX, some legacy business roles have been removed from the standard. These are:

- Business User ERM It is now substituted by the IRM Contributor profile
- <u>Local Risk Manager</u> It is now substituted by the Risk Manager business role which can be defined at the entity level
- <u>Risk Stakeholder</u>
- <u>Business User Internal Control</u> It is not substituted by the IRM Contributor profile
- <u>Audit Director</u> It is now substituted by the Audit Director profile
- <u>Audit Functional Administrator</u> It is now substituted by the IRM Functional Administrator profile with Internal Audit product license
- <u>Auditor</u> It is now substituted by the Auditor profile
- <u>Auditor/Controller</u>
- <u>Auditor/Controller/Compliance Controller</u>
- <u>Compliance Controller</u>
- <u>Compliance Functional Administrator</u>
- <u>Compliance IC and Audit Director/Manager</u>
- <u>Compliance Manager</u>
- <u>Control Executer</u>



- <u>Control Tester</u>
- <u>IC and Audit Director</u> It is substituted by the IRM Manager with Internal Audit and Internal Control product licenses
- <u>Internal Control Director</u> It is substituted by the IRM Manager with Internal Control product license
- <u>Internal Controller</u> It is substituted by the IRM Contributor with Internal Control product license
- <u>Risk Assessor (deprecated)</u>
- <u>Risk Functional Administrator</u> It is substituted by the IRM Functional Administrator with ERM product license

8.17.5. Local Currency on Entity

The field "Local Currency" available on the Org-Unit property page has been removed.

Administration department	:
Characteristics 🗸	
Characteristics	^
Code	
Name	
Administration department	
Parent Entity	
	>
OrgUnit Type	
A Structure	~
Internal/External	
	~
evel	
	~
itatus	
	~
Locale Currency	
a and a strate	~
	-

Figure 106 - Removed Local Currency field on Org-Unit property page

8.17.6. Campaigns Refresh Button

The button Refresh which was available from the list of controls execution campaigns is no longer available

This button allowed to recompute the scheduling jobs of the selected campaigns.

This same functionality is now made available via the button "Schedule Checklists" which is to be found in the property page "Sessions", section "Steering Calendars" of every execution campaign.

9. HOPEX IT Architecture

Many new functionalities in HOPEX IT Architecture focus on facilitating the work of solution architects. They can now simply leverage a library of cloud services (Azure, Google Cloud, AWS) to quickly model cloud architectures. New wizards accelerate the initialization of environment diagrams and new modeling capabilities have been added to model integration chains and micro-services.

The solution UI/UX has been modernized and is now aligned to all other HOPEX solutions.

9.1. User Experience

9.1.1. Desktop

The IT Architecture desktop is switched to 'public workspace' by default, to align with other products.

9.1.2. Profile simplification

To simplify the offer, some IT Architecture profiles have been removed. Usable profiles are:

Menus	IT Arc Func Admin	IT Architect	Application Designer	Applications Viewer and
	▼	•		Applications Viewer (lite) 💌
Home	W	W	W	R
Dashboard	W	W	W	R
Ideation	W	W	W	R
Business IT Alignment	W	W	W	R
Data Management	W	W	W	R
System Architecture	W	W	W	R
Application Architecture	W	W	W	R
Application Design Resources	W		W	R
Technical Architecture	W	W	W	R
Infrastructure	W	W	W	R
Templates and References	W	W	W	R
Governance	W	W	W	R
Policy	W	W	W	R
Environment	W	W	W	
Reports	W	W	W	R
Collaboration	W	W	W	
Administration	W			

A migration tool will transfer existing assignment from deprecated profiles to "IT Architect" profile when updating the HOPEX environment.

9.1.3. User Interface

Many improvements have been made to simplify the usage of the solution and make the navigation more intuitive.

The solution now uses a new desktop look and feel.



9.1.4. **New menus**

IT Architecture menus have been reviewed for rationalization and simplification purposes.



9.1.5. Shapes and icons review

New rules for IT Architecture shapes have been set to improve look and readability.





9.1.6. Property pages review

Property pages of main objects have been improved using columns display of attributes.

HOPEX IT Architecture ≓	③ Q ×	イ・ト・ C Autosaved	🐜 🛞 🕑 🕞
Home / All Applications / Accounting + Back			
» 🛃 Accounting			Ext JS : Trial
General V Characteristics Components V	Usage 🗸 Performed Process Reporti	ng Object life Activity F	Feed Workflows
A Identification			
Name			
Accounting			
Comer Library Payroll			
#Tags			
Code	Version Number	Application Template	
Application Type	Cloud Computing On-Premises		
E Default font ■ B I □ T ■ T ■ ■ ■ ■ ■	T' I ∨ ∭ ∨ ≧ ≟ ∃ Ø	● % X =: =:	
✓ Service Level Agreement			
★ Functional scope			
S × Responsibility	\$		

9.2. Business Capability Map and Functionality Map

An improved Business Capability (tree) diagram has been added to come closer to former City Planning diagram and extend the features to Functionality (tree) diagram.





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9.3. Environment diagrams Initialization

To accelerate modelling activities, IT Architecture proposes an initialization wizard for environment diagrams (structure, scenario of flows, deployment, logical application system diagrams) of Application System, Application etc.



The wizard searches and proposes all existing application flows (or interactions) defined in the repository around the environment "subject" and proposes to "reuse" some of them in the new diagram. User selects which contents and partners he/she wants to "reuse" and wizard creates corresponding needed objects.

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(Note the wizard can be used in conjunction with another wizard which places automatically objects in the diagram: see next new feature).



Figure 107 - Initialization wizard







HOPEX provides an auto-positioning feature in environment diagrams (structure or scenario of flows diagram) of Application System, Application etc.

This feature can be launched manually by user or automatically in the context of the initialization wizard (previous feature).

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From #CP4, other diagrams for structure and scenario of flows have been improved with an auto-layout feature (with a specific positioning canvas).

Scenario of flows. Before:



After:





Structure diagram.

Before:



After:





This feature come with the capability to define a coefficient influencing spaces between objects during auto-layout calculation process.

Auto L	ayout : Diagram compression/dilation coefficient	z ×
Dilatio	n coefficient: 1.1 🗘	
3	This coefficient is used to improve the readability of the diagram by increasing or decreasing the spacing between the objects of the diagram. It can also be used if the number of objects is very large and the diagram size is close to its physical limit.	×
	ОК Сал	icel

9.4. Application flow modeling

Application flow description has been improved with categories. Flow order can be manually captured and HOPEX provides following categories and values (but can be completed by customer if needed):

	Communication Frequency
General V Characteristics Qualification Workflows Activity Feed	 Communication Frequency = Several times a millisecond
Local name Absence Proof	 Communication Frequency = Several times a second
Owner	
Scenario of Application System Environment Flows Payroll Management System Environment	Communication Frequency = Several times an hour
#Tags	Communication Frequency = Several times a day
	Communication Frequency = Several times a week
 Flow Qualification 	Communication Frequency = Several times a month
P Connect 🛛 🖣 Reorganize	🖪 🧒 Communication Frequency = Several times a year
	Communication Method
Communication Frequency = Several times a second	Communication Method = Asynchronous
Communication Method = Synchronous	Communication Method = Synchronous
Communication Weight = Few Kilobyte	Communication Weight
Required Bandwidth = Few hundreds of kilobits per second	Communication Weight = Few Kilobyte
Required Latency = Few milliseconds	Communication Weight = Some hundreds of Kilobytes
	🗈 🤣 Communication Weight = Few Megabyte
	Communication Weight = Some hundreds of Megabytes
	🖪 🤣 Communication Weight = Some Gigabyte
	🖪 🤣 Communication Weight = Some Terabyte
	Required Bandwidth
	🖪 🧑 Required Bandwidth = Few hundreds of kilobits per second
	Required Bandwidth = Some hundreds of kilobits per second
	Required Bandwidth = Around 1 Megabit per second
	🖪 🔗 Required Bandwidth = Few Megabits per second
	🖪 🤗 Required Bandwidth = More than 5 Megabits per second
	Required Latency
	Required Latency = Few milliseconds
	Required Latency = Some tens of milliseconds
	Required Latency = Around 100 milliseconds
	Required Latency = Some hundreds of milliseconds



Flow categorization can be displayed in flow diagrams:



From CP3, it is now possible now to order application flows inside a scenario to visualize sequences and potential branches:





(Orders are captured in scenario of flows property page).

From #CP4, the application flow creation wizard has been improved. Now it proposes a list of existing content sent and/or received by the 2 components user wants to link with the new application flow. User can still select another content by using autocompletion assistance or select tool; or create a new one.

Creation of Application Flow (Capital Markets -> Booking Management)								
Select the transmitted content from the candidate contents or among all the contents of your repository. You can also create a new content.								
Select a content from the repository or create a new one								
Select a content from the list	Select a content from the list							
Name 🕇	Context	Comment						
Customer Profile	CRM Europe>Booking Management (Global Applicati							
Stocks	Inventory Management>Booking Management (Glob							
Travel package	MyCompany.com Mobile>Booking Management (Glo							
Vacation package	MyCompany.com Mobile>Booking Management (Glo	All packages include:						

9.5. Structure diagrams

9.5.1. Improvement of Exchange Contract creation

It is now possible to create Exchange Contract Templates that will be used as canvas for Exchange Contract creation. 3 standard Exchange Contract Templates are provided and HOPEX customer can create new ones quite simply.



From #CP4, 3 new standard Exchange Contract Templates are provided:

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The creation wizard allows to personalize Exchange and Message Flow names from the selected template.

Creation of Exchange Contract - Template Creation	2 ×
Request-Response[To be renamed]	
E S[To be renamed] - Request-Response	
■> Invoked Participant o> Invoker Participant	
🗖 📨 [To be renamed] - (Template) Response	
■ → Invoker Participant o> Invoked Participant	
[To be renamed] - (Template) Request	
	Previous Next OK Cancel

9.5.2. Improvement of structure diagram initialization

Service Points and Request Points are automatically positioned on the boundaries of the concerned Building Block (Service Points on the left hand-side and Request Points on the right hand-side).



9.6. Deployment Architecture

9.6.1. Deployment Architecture renaming

Technical Architecture diagram and components are renamed as Deployment diagram and components. Technical Architecture is kept as the layer name (also including technology and stacks inventories etc.).



- Application System Technical Architecture -> Application System Deployment Architecture
- Application Technical Architecture -> Application Deployment Architecture
- Application Technical Area -> Deployable Application Package
- Technical Data Area -> Deployable Data Package

9.6.2. Improvement of Deployment Architecture creation

It is now possible to create Deployment Architecture Templates that will be used as canvas for Deployment Architecture creation. A Deployment Architecture template is composed of

3 Tiers Architecture (RDBMS)		
X Client	X Server	
 Electronic Mail Office Application Reporting 	 Application Server	
	PIM	1
	8471	
	Database	
	◆RDBMS	
		_

Creation of Application D	Deployment Architecture - Deploy:	able Packages			* ×
Local name					
Application Deployment Archit	tecture				
The new deployment at If new packages are critical	rchitecture based on the model can re- reated, it is possible to specify which so	ise existing deployable package ftware technologies are require	es of the application or create new ones. d: Hopex proposes the technologies identified directly	in the model or those that cover the technical function	nalities required by the model.
🖹 Instant Report					т
Name 1	Reuse existing?	Deployment Package	DeploymentTechnologies	DeploymentPackageType	
🔏 Client			Office 2013 × BI Report Studio ×	✓ □ Deployable Application Pack	
🎽 Database				Deployable Data Package	
🔏 Server			cc: Mail	Deployable Application Package	
			Domino Webmail		
			Email Manager		
			Express Reporter		
			Go! Office		
			Impromptu Web Reports		
<< < Page 1	of 1 > >> 🖓 Show 50	elements			Displaying 1 - 3 of 3
					Previous (Next) OK (Cancel)

9.6.3. Cloud Services

It is possible to import in HOPEX the cloud service catalogs of Amazon (AWS), Microsoft (Azure) and Google (GCS). Imported files contain service cloud names and images.

Display 🗏 🛛 Levels 🗐 🗸 🗍 Un	fold all items										
Google Cloud Platform Technic	al Functionality Map	Cloud Al	Compute	Data Transfer	Developer Tools	Generic	 Identity & Security 	 Internet of Things 	Management Tools	Networking	Storage & Databasi
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Cloud services (or IT Devices) can be used in Deployment Architecture to define prescription for deployable package hosting solution. Cloud services (or IT Devices) image will then be displayed in the deployable package shape.





9.6.4. Micro-Services

It is now possible to add a micro-service in a deployment architecture (as a selfdeployed component).



9.7. New modelling capability: ESB, EAI ...

A new modeling capability allows to design integration chain using <u>the Enterprise</u> <u>Integration Pattern notation</u>. This model allows to design integration process supporting application flow from all HOPEX scenarios of flows. Main concepts are:

Communication system (to identify main integration system)

Software Communication Chain

Communication Services (blocks of a software communication chain). 3 kind of services can be used:

Channel (is a place where an application can read and/or write information)

Router (determines which destination channels should be used in next step)

Translator (converts a message from a format to another)

It is possible to zoom in a software communication chain diagram from a content in scenario of flows.





From CP3, a new report is provided to analyze communication components rationalization:



This graph shows the number of contents for each ratio "number of software communication chains per processed content ". It therefore expresses the distribution of the flow processing urbanization rate. This rate is inversely proportional to the number of application communication chains that process the same content.



9.8. Governance

9.8.1. Business Policy and Architecture Principles Compliance

It is now possible to define architecture principles in a category tree and link them to building blocks they apply to. Existing capability to define business policies and categorize them in sections has been added to IT Architecture also.

Both concepts are handled in a dedicated tree:

HC	OPEX Architecture Sele	ect a	n object type 🐱 Find object	> Q ~	
	Policy / Policy Framework / A	Audit	Trail		
	«		6 6	Search Q	Audit Trail
4	Home		🛚 🗟 БОНО		L Characteristics
2	Dashboard		Policy Framework		Definition
*	Ideation		Architecture Principle Set 101		Name
	Business IT Alignment		General		Audit Trail
<u>.</u>	System Architecture		Governance		Owner Policy Framework Architecture Principle Set 101
2	Application Architecture		L [*] Business		Code
77	Software Design (UML)		D I Process		
×	Technical Architecture				Title
	Infrastructure				
_	Data Glossary		Applications		Image: Default font ▼ B I U 1 T T I V III V IIII V IIIII V IIIII V IIII V IIII V IIII V IIII V IIII V IIII V IIIII V IIIII V IIIII V IIIII V IIIII V IIIII V IIIIII V IIIIII V IIIIIIII V IIIIIIII V IIIIIIIII V IIIIIIIIII V IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
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2	Reports		L Collaborative		
*	Collaboration		L Consistent Navigation	I	
	Administration		L Easy of Use	I	4
			🛓 Equitable Use		

Then it is possible to assess compliance of an IT building block against those policies and/or principles.

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•	🛃 Billi	ing									÷
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C) Dashboard	ēj	Partial Compliance Compliance									
Application	∧ Poli	cies to comply with									
Capabilities		onnect								۲	r
771		Local name	Policy Framework	Last Compliance Assessment							
Software Desi		rchitecture Principle (4)									
*		API should be documented	Architecture Principle Mega Catalog	Partial Compliance (3/16/2022)							
Technical Arch		Application data should be available and shareable for	Architecture Principle Mega Catalog	Full Compliance (3/16/2022)							
1nfrastructure		Sensitive data should be encrypted in all flows and st	Architecture Principle Mega Catalog	No Compliance (3/16/2022)							
		User interface is as simple and intuitive as possible	Architecture Principle Mega Catalog	Partial Compliance (3/16/2022)							
Ê											
Inventories	<<	< Page 1 of 1 > >> C Show	w 50 🗘 elements					0	isplaying	1 - 4 of	4
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Note : Mega provides a standard catalogue of architecture principles and customer can easily define their own if needed.

9.8.2. Decision recording

Il is now possible to record decisions for application?

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Software Desi	∧ Decisions											
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Technical Arch	Date Decision Type Decision Value	Comment										
Infrastructure	☑ 3/16/2022	Following steering committee	ee of first february	2022, the app	ication will not be	e replaced but rat	ther modernised an	d its services	exte			
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Collaboration	✓ Enterprise Architecture Projects											
☆												
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9.9. Smart duplication tool

From CP3, a new tool allows to duplicate a building block deeply by selecting how each of its components are processed (they can be kept as it is, duplicated also or removed during duplication process).

Duplicate a building block to create a new one with	similar structure (to avoid start	ing from scratch). The new building block can be a new version of source or just a c
wner		
brary Payroll		>
8 8		
	Duplication Mode	New name for created object
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Components		
✤ HeadQuarter IT Infrastructure	🗘 Кеер	х
🗖 😻 Subsidiary IT Infrastructure 🛛	New copy	Subsidiary IT Infrastructure (APAC)
Components		
🗈 💻 Accountant Workstation	🗘 Кеер	х
HR Workstation	🗘 Кеер	х
Subsidiary Computing Server	New copy	Subsidiary Computing Server (APAC)
Components		
🖿 🔧 🛛 Accounting Control	× Ignore	х
🔏 Accounting Storage	× Ignore	х
🔚 Java SE 7	× Ignore	х
🗈 🔧 🛛 Payroll Control	🗘 Кеер	х
🔏 🛛 Payroll Storage	🗘 Кеер	х
📱 😭 Subsidiary Oracle Server	🗘 Кеер	х
📱 😭 Subsidiary SQL Server Server	🗘 Кеер	х
🖪 😭 Subsidiary Time Management Server	🗘 Кеер	х
🗖 😭 Subsidiary Web Server	New copy	Subsidiary Web Server (APAC)

This tool can be used for following building blocks :

- Application System Environment, Application System
- Application Environment, Application, Micro-Service, IT Service
- Business Capability Map, Business Capability, Functionality Map, Functionality, Technical Functionality Map, Technical Functionality
- Logical Application system, Logical Application System Environment
- Application Deployment Environment
- Resource Architecture, Resource Architecture Environment, Resource Configuration, IT Infrastructure, Hardware



Duplication source:



Duplication result:



9.10. Miscellaneous

9.10.1. Technology Stack

It is now possible to link Technology Stacks to IT Service and Microservices (like application).

9.10.2. Deployment Architecture Environment

A new concept ("Deployment Architecture Environment") defines how an application deployment integrates in its environment(s). A diagram is attached to this new concept.

9.10.3. Infrastructure Device Assembly diagram

New capability to define binding between a logical communication port (of the IT Device) and hosted Deployable Package. It is then possible to detail which client/server port of the deployable package is reached through this communication port, and by extension, which Service/Request Point is concerned.



9.10.4. Comparison report

The generic comparison report now compares and highlight the IT flows from the HOPEX IT Architecture solution



9.10.5. Infrastructure Layer Diagrams

From #CP4, an hardware can now be associated with a specific picture that will be used in diagrams:

Work Site - Resource Architecture Assembly Diagram ④ 🕄 🐻 🖾 🗸 🤤 🗸 🍳 100% 🗸 🛛 🔂 💭 🖾 🗮 🛛 🐑 🗮 🖉 🖓 Arial ~ 🖗 🖾 🔶 I Work Site 🎍 🔱 🖊 🤣 🥟 🏠 2 2 **50 B** ↔ 📑 **N** ٠ Δ 🦉 👚 🔘 88 V

10. HOPEX ITPM/ITBM

Many improvements are meant to accelerate EA projects from strategy to execution. This is achieved by automating the data collection with application discovery, increasing the business focus of ITBM with more powerful and flexible capability maps and the addition of customer journeys.

This new version also introduces smart recommendations to help you take objective data-driven decisions on application rationalization and cloud migration.

10.1. User experience

10.1.1. Menu reorganization

Menu entries have been reduced to a manageable number and reorganized to give the product a more business oriented ergonomic.





Main improvements are:

- Quick access to Business Capability Map Breakdown reports (box in box), via the "Business Architecture / Capability Maps" menu item (see chapter 10.2)
- Direct access to Applications and Technologies through dedicated menu entries
- A new "Tools" menu entry, listing business and use case-oriented functionalities
- All main concepts of the solution are accessible via the "Inventories" menu

10.1.2. Property pages improvements

Main objects' property pages have been reviewed and enhanced.

The use of multicolumn for properties maximizes the available space.

Indicators are clearly and colorfully visible at the top of the Characteristics property page, to highlight the current status and calculated properties of the product's main concepts.

🛃 Account Management				
Characteristics Installation Version Projects Asses	sment 🗸 Cost Decisions Reporting	Rule Application Workfl	Application Impact	Activity Feed
None Business Value None Functional Support Vey Hig Obsolescence		r Compliance		
Name				
Account Management				
Owner Library Application >				
#Tags				
Code	Version Number	App	lication Template	
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Application Type In House Application	Cloud Computing On-Premises	~		
		8 0		
Neque	porro quisquam est qui dolorem ipsum quia dolor si	t amet, consectetur, adipisci veili		
 Service Level Agreement 				
Functional scope				
🛎 Business Line 💿 Business Process 🛛 🔶 Business Capabilit	y 🔷 Implemented Functionality			
• New <i>P</i> Connect				٢
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Sale to the professionals				100%

10.2. Business capability Map quick access



For IT Business users to quickly access, consult and navigate through their capability maps, a dedicated menu entry has been created, displaying the list of available Business Capabilities Map Breakdown reports.

HOPE)	K folio Management ≓
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•	Business Architecture
e <mark>v</mark>	🏘 Capability Map
: :	Capability Tree
	🖄 Value Stream
8	1 Customer Journeys
×	Strategic Planning
Ц	Policy Framework
Ø	





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Capability Map Breakdown report has benefited from extensive improvements made on the Box in Box report. For further detail, please refer to <u>Breakdown Reports.</u>

10.3. Improvement of capability selection (v4.2)

Connecting a business capability to something is now done via a business capability map tree by default (instead of the complete alphabetical list).

Connecting	2 ×
Capabilities By Capability Maps 🗸	> Q
□ Select sub-elements □ Expand the selected items	
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🗖 🗋 🗟 SOHO	
🖪 🔲 💸 🛛 Bank Capability Map	
🗖 🗋 < BankInsur Businesss Capability Map	
Asset Management and Private Banking	
🗌 🔶 Asset Portfolio Management	
🕒 🗋 🔶 Financial Product Catalog	
Communication	
🗈 🗔 🔶 Company Management	
🗈 🗔 🔶 Compliance	
🗈 🗔 🔶 Credit Risk	
🗈 🗋 🔶 Finance	
Fraud and Error Detection	ß
🗈 🗋 🍐 Human Resources	
	onnect Cancel

Similarly, connecting a technical functionality to something is now done via a technical functionality map tree by default (instead of the complete alphabetical list).

10.4. Improved Enterprise hierarchy

Existing Enterprise hierarchy has been improved and new Stage levels have been added:

- Business Operating Models with diagrams
- Business Operating Scenarios with diagrams
- Resource Operating Models with diagrams
- Reference Business Information Map with diagrams

Referenced Data Maps with diagrams

10.5. On-premises and private cloud technology Discovery

Thanks to the partnership with Eracent[©] and their discovery solution Eracent[©] ITMC[®], users are now able to import into HOPEX, newly discovered technologies on deployed assets. This integration will help you quickly populate your repository with all applications and technologies running on you network, from Data Centers to Desktops and mobile devices.

Eracent ITMC agents are deployed on-premises and private cloud assets and scan their hosts for software installations and usage. All gathered data is aggregated in a common Eracent ITMC database, hosted also on the client's network.

Based on a configurable scheduled batch, newly discovered technologies are being pushed and created into HOPEX, valuing the following information:

Name Vendor (linked to the matching Org-Unit) Discovery Id (will be used for normalization into IT-Pedia) Technical functionality Version (linked to the matching Varied Object)



10.6. New industry content

Some industry reference models, such as Business Architecture Guild's industry (restricted to Guild members, see

https://www.businessarchitectureguild.org/page/INDREF for more information) or

BIAN capability maps, are now embedded in ITBM. HOPEX users can leverage on this content to start and accelerate their EA projects.

10.7. Customer Journey integration

The Customer Journey Mapping module is now included in ITBM to enhance the business support. It allows enterprise architects to better engage with business stakeholders with a customer centric view. For further details on Customer Journey latest improvements, please refer to <u>HOPEX Customer Journey</u>.

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🕼 Home	•	New			e T
🖓 Dashboard		Local name †	Customer Journey Group	Business Partner	Customer Satisfaction 🕕
Business Architecture		• "Online Banking - Customer experience Loan	Online banking experience	单 Loan applicant (25 - 45 yo)	High
		 Health Insurance purchase Duplicate 	Online banking experience	Mobile customers	Very High
🏘 Capability Map		• Health Insurance purchase	Online banking experience	Internet customers	Neutral
Capability Tree		🛊 Internet Banking - Customer Journey	Online banking experience	💧 Loan applicant (25 - 45 yo)	High
🖄 Value Stream		 Ordering pizzas for a game event 	Online banking experience	Online banking customers	Not Evaluated
🚊 Strategic Planning					
Policy Framework					

10.8. Policy Framework

It is now possible to define some Policy Frameworks and/or Architecture Principle sets in ITPM.

HOPE	X tfolio Management ≓	Select an object type 💙	Find object 🔸 🔍 🗸 🗸	∽ ァ ♂ Autosaved	>	?	Ð
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Business policies and architecture principles can be categorized with as many levels as customer wants. Then each business policy or architecture principle can be described with its scope: the assets that should be compliant with it.

10.9. Smart Analysis



The value of an EA repository is to provide a single view of the IT landscape of an organization to help users take decisions and share them across the organization.

ITPM/ITBM now includes Smart Analysis, enabling portfolio owners to get recommendations on possible actions (on different topics), and record decisions. Recommendations are made using aggregated scores when possible or dedicated questions to collect the missing data of a given problematic.

Analysis steps:

Data completion checking to assess analysis relevancy

Data analysis with dedicated report to compare portfolio application scores

Decision recommendation when possible

Decision recording for each application

10.9.1. TIME Rationalization

This analysis shows rationalization recommendations on a given portfolio's applications. Possible decisions are:

Tolerate Invest Modernize Eliminate

	be recorded for each application in the port					
Recalculate Provide Completio	n Details 🔍 Visualize 🧭 Fir	halize				
		TIME Anal	ysis - Indicator Valu			
			ysis - Indicator valu	65		
÷	Technical Index Data Completeness %	Business Index Data Completeness %	Last Decision	Recommendation Recalculated On: 9/7/2021	Decision	
Account	40/100 100%	22/100 66%	9/7/2021 Maintain	Eliminate	9/7/2021 Maintain	
Account Management	70/100 100%	62/100 100%	9/7/2021 Invest	Invest	9/7/2021 Invest	
a a	20/100 23%	0/100	9/7/2021 Eliminate	Eliminate	9/7/2021 Eliminate	
Accounting	30/100	0/100 0%		Eliminate	Create Decision	
Account Payable	20/100	0/100 0%	9/7/2021 Eliminate	Eliminate	9/7/2021 Eliminate	

These results can also be shown on a TIME matrix to identify which action should be taken on which application of the given portfolio.







10.9.2. Cloud migration

This analysis gives a portfolio manager keys and recommendations on whether an application should be migrated on the cloud, and how. Possible decisions are known as the 6 "R'':

Rehosting: simple to execute. Allows to postpone rearchitecting decision while taking advantage of some of the cloud benefits.

Re-platforming: small refactoring upon basic rehosting.

Refactoring: rearchitecting application to take full advantage of cloud capabilities

Retiring

Retaining

Repurchase

Amongst these 6 possible decisions a user can record on the given application, only 3 can be recommended by HOPEX. Others result from information not handled by HOPEX, like license costs for example.

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10.10. Recording Decisions on Applications

Through a dedicated property page "Decisions", a user can record decisions on an application. Decisions are characterized by:

The date of the decision

The decision type (Cloud migration or TIME rationalization as standard delivered types, or other custom decision types to come)

The decision value (amongst values, parameterized for each decision type)

An optional (but recommended) comment

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<u>م</u>	🛃 Account Management				
67	Characteristics Installation	Version Projects	Assessment 🗸	Decisions C	ost Reporting
	Decision				
.	😧 New 🗐 Instant Report				
	Date	Resolution Type	Resolution Opti	Comme	nt
Ē	✓ 7/28/2021	Cloud Migration	Refactor		
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10.11. Improvement of deployed asset localization

Software installations were formerly located via the "site" object. Now we distinguish the geographical localization and the company premises. A data center object is now used to represent premises, that can be geographically located via the site object.

During migration, data conversion is made by creating a data center from site used. A link between the data center and the site is made.

This new Data Center object is shared with Data Governance and IRM solutions.

10.12. Excel import tool for ITBM (v4.1)

Mega provides an excel import tool for "BASP" data in the HOPEX store as a solution pack.

○ M E G A

AutoSave 💿 💽 🥍) ~ (⁻ ~ ⊛ ~ - ITBM	1 Template (last version).xlsx - Last Modified: 01/12/2020	• $ ho$ Search
ile Home Insert	Draw Page Layout Formula	as Data Review View Help	
10 - : ×	$\checkmark f_x$		
A A	В	с	D
	This HOPEX template provi	des means to bulk import ITBM data	
	This HOPEX template provi		
	Strategy	Enterprises	allows import of Enterprises : creating Enterprises with their properties (including link with existing reference Business Capability Map)
MEGA		Goals	allows import of Enterprise Goals : creating Enterprise Goals and their Strategic Themes
SEE THE BIGGER PICTURE		Strategies	allows import of Enterprise Strategies : creating Enterprise Strategies and links Enterprise Goals (created in "Enterprise Goals" tab)
	Transformation Stages	Stages	allows import of Stages : creating Stages with their properties
		Objectives	allows import of Stage Objectives : creating Stage Objectives and links to Enterprise Goals (created in "Enterprise Goals" tab)
0		Tactics	allows import of Stage Tactics : creating Stage Tactics and links to Enterprise Strategies (created in "Enterprise Strategies" tab) and Enterprise Objectives (created in "Enterprise Objectives" tab)
1	Exhibited Business Capabilities by Stage	Exhibited Business Capabilities	allows import of Exhibited Business Capabilities : creating Exhibited Business Capabilities with links to existing Business Capabilities and Stages, Stage Objectives (created in "Stage Objectives" tab) and creating fulfillments by existin Applications or Application Systems.
2			Note : this means Business Capabilities, Application and/or Application System have been previously captured in repository or imported with the ITPM import too
	Business Architecture	Value Streams	allows import of Value Streams : creating Value Streams and their sub-Value Streams
5		Value Stages	allows import of Value Stages : creating Value Stages and links to their owning existing Value Stream and required existing Business Capabilities
5		Business Function Areas	allows import of Business Function Areas : creating Business Function Areas a their sub-Business Function Areas
7		Business Functions	allows import of Business Functions : creating Business Functions and links to their owning existing Business Function Area, required existing Functionalities and required Business Skills
3		Business Partners	allows import of Business Partners : creating Business Partners
	Date Format	Date Format should be:YYYY/MM/DD	
	Date i offilat		

This tool can be used for importing data from former solution "Business Architecture" into ITBM (see Voices post on this subject).

11. HOPEX Privacy Management

11.1. Menu and WET

11.1.1. Menus renamed – #CP4

The first level menus have been renamed.

11.2. Minor modifications

11.2.1. Tags

All major objects in HOPEX Privacy Management now provide a #Tags field to add user defined tags to the object.

🝘 Biometric		
Characteristics	Activ	ity Feed
Data Category Name* Biometric	Risk Scale <u>∧</u> High	Sensitive Data
#Tags		

Figure 109 - Tags field on main HOPEX Privacy Management objects

11.2.2. Data Breaches Attachments

It is now possible to attach documents to any given data breach thanks to the dedicated section "Attachments".

11.2.3. Profile Renaming

The profile "Activity Owner" is now renamed into "Processing Activity Owner".

11.3. Removed Features

11.3.1. Record of Processing Hierarchy View

The hierarchy view of "processing activities" is no longer available. This was accessible from the menu "Record of Processing."

11.3.2. Processing Activity Scope

The section "Scope" in the processing activity Characteristics property page, no longer proposes the option to link third parties.

This section is used for managing visibility rights over the processing activity record, and the third parties were not fitting into this use case. If a third party must be defined on the processing activity, this must be done in the Details page, within the table "Processing Elements".



11.3.3. Removed Profiles

Two standard profiles have been removed from the solution:

- **Privacy Management Functional Administrator** -> This profile was to be used to assign user logins. If you happened to use this profile, you can now use the HOPEX Administrator profile instead
- DPO Correspondent -> This profile had the same functional specifications of the Privacy Team one. If you happened to use this profile, you can now use the Privacy Team profile instead.

12. UX Improvements

12.1. Improved navigation between panels

The display and logic of the panels (central, left and right) have been revisited to optimize navigation and maximize legibility of diagrams, reports, wizards, workflows and property pages.

The section is extensive about the various combinations of opening & closing panels and what options are displayed according to the context. This said, this new behavior is intuitive and should require no learning.

12.1.1. Home page

As a general principle, buttons are hidden unless they are relevant to the user's working context, making pages lighter.

To facilitate reading, when a user opens a report or property page from the homepage, it will always take full screen rather than opening inside the right - often too small – panel.







When the user clicks a home page tile, the content (list or tree) also opens in full page mode, while the navigation menu is automatically hidden.

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aa 🔒			00.00	D	60.00 ★ (0 Star	Unknow
Account Payable			0.00	0	€0.00 ★ (0 Star	Unknow
Accounting	 Production 		0.00	0	€0.00 ★ (0 Star	Unkno
Accounts v2.0	 Retirement 		0.00	0	€0.00 ★ (0 Star	Unkno
Advisor Client			0.00	0	CD.00 ★ (0 Star	Unkno
Algorithmic Trading			0.00	D	CD.00 ★ (0 Star	Unkno
analytic Dashboard			0.00	0	£0.00 ★ (0 Star	Unkno
APPC0.com			0.00	0	€0.00 ★ (0 Star	Unkni
Application SCM			20.00	0	€0.00 ★ (0 Star	Unkno
Application Support			0.00	0	CD.00 ★ (0 Star	Unkni
Archived Manager			0.00	D	CD.00 ★ (0 Star	Unkn
Assembly Manager			0.00	0	60.00 ★	0 Star	Unkn
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12.1.2. Lists

When on a list...

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...clicking an object now directly opens its properties in full page mode, without requiring using the floating toolbar properties icon.

The second-from-the-top tool bar now proposes a back button which instantly displays the previous screen, in this case the original list the user started from.

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12.1.3. Open Diagram from list in view mode

Similarly, when opening a diagram from a list, the diagram is displayed in the central panel, side windows being closed by default, with the back button showing up.

You can always add comments to diagram's objects by using the comment button on the right side of the second toolbar.



Users can dive directly from the diagram (right-click) to properties or reports, which will also replace the previous diagram displayed; and activate the back button.



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12.1.4. Open Diagram from list in edit mode

Creating / editing a diagram from a list opens the diagram in edit mode. In this case the properties button on the right of the toolbar displays / hides a side panel with properties, letting the user complete or consult the objects information and adjust its working space.





MEGA

While inside the properties of a given object, should the user move to another object's properties...the breadcrumb tracks it all to come back to the previous properties page. This is very convenient for not losing the context of work.





12.1.5. Trees

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Trees are very convenient for hierarchies and classifications. Navigation is made easier as clicking a Tree element directly opens its properties with no need for using the floating toolbar icon.

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If the object in the Tree is an actual diagram, the click opens the diagram in main panel as expected.





Same thing, clicking a report object inside the Tree opens the report in the main panel.

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Closing the main panel (x icon) make the Tree take the complete available space.

It is always possible to add comments via the comment icon.



12.1.6. Open diagram from the Tree in view mode

When the user opens a Diagram using the floating toolbar..,





...then opening properties will replace the Diagram.



You can always go back to the diagram by clicking the back button.



12.1.7. Open Diagram from the Tree in edit mode

When the user opens a Diagram in edit mode using the floating toolbar, you will see contextual icon "properties".

Tree will be hidden by default so that users can have enough space for diagram & properties. He can always reopen the tree by clicking the tree icon on toolbar.





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The properties of the diagram in edit mode will open the properties panel to your right. You have the possibility to close the property panel if it is no longer needed.

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By default, the tree is hidden when you open properties of diagram in edit mode to have more space to edit diagram and view its properties.







If you want to display the Tree to drag & drop objects, select the contextual icon which appears on toolbar only when the tree is hidden.



12.1.8. Navigation menu

The navigation menu provides access to all content and key features of HOPEX.

Hovering on any navigation menu icon shows the name of the menu item & displays the sub-menu items if there are any.

All icons have been converted to monochrome icons to make it lighter and the selected icon is displayed in green.

When the user opens any menu item from navigation menu, the menu will collapse by default and the corresponding Lists / Tree will appear in the main panel.



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12.1.9. Pin the navigation panel

By default, the navigation panel collapses as soon as you select any of the navigation panes. Pinning the navigation panel prevents it from collapsing.

This pin action is saved until you relaunch the application.

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12.1.10. Browser back button

The browser back feature is now supported allowing the user to go back to the initial home screen.

12.1.11. Instant report

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Available from a selection of items in a list, the Instant Report opens in full screen mode for maximum visualization comfort.

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Once generated, individual records making up the report can be seen at the bottom, and the details on a specific record in the right panel once the property icon has been selected.

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Closing the Instant Report reverts back to the initial list used to generate the report.

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Â	🗹 🛕 Change management o	overload	Ant	toine 🗹	Submi	Low	Rare	Low	Effective	O Low	Low	Workshop		
ଡ଼	🗹 🔺 Change risk				Valida	Low	Possible	Low	Few obse	Iow	Very Low	Survey		
R).	🗹 🔺 Contractual risk				Valida						Very Low	Survey	▲ Clients,	, P
Gal.	🗹 🔺 Counterparty risks				Valida						Low	Survey		
	🛃 🔺 Creation of an imagina	ry supplier				Low	Likely	Medium	Few obse	😑 Medium	Low	Workshop	🛦 Clients,	P
	🗹 🛕 Credit card risk		Sin	non 🗹	Submi						Low	Audit		
	Dammage to physical	assets	Sin	non 🗹	Valida						Very Low	Survey	🛦 Damage	e t
•	🛃 🛕 Data encryption		Tor	nmaso 🛛 🗹	Valida						Very Low	Workshop		
T	🔽 🔺 Data Quality		Jul	ius 🗌										
J	<< < Page 1 of 3	> >> 🕄 🕄 Show 50 🗘	elements										Displaying 1 -	50 of 1

12.1.12. Tabs on property page

Property pages present several tabs grouping the details by themes.



	EX ≓ 0 Q ~	☆ ♪ ♂ Ə Autosaved 🐥	80 🗗
Ш не	ome / Libraries / Risks / All Risks / Credit card risk: 🗲 Back		
»	Credit card risk		1
	Characteristics Assessment Mitigation Incidents Action Plans Reporting Activity Feed Workflows		
63 12	33 months Intervention Cast Austrament Intervention Cast Australiant Intervention Cast Australiant Intervention Cast Australiant Intervention		
fit L	∧ Characteristics		
	Name Crasils card risk	Code E-R17	
e c	C Hajor Risk	Status Submitted	
Ø	Owner Identification Mode Simon > Audit		
鼤	Description		
₽	C Default font v B I U T T I v Ⅲ v E E E Ø IE IE K Ø ⊙ Clear Formatting		
했			
圡			
	✓ Responsibilities		
	✓ Scope		
☆	✓ Analysis		
Ū	✓ Attachments		

12.1.13. "More" on properties header

There is a "more" shown by " " on the right of the properties header launching a contextual menu with additional features depending on the object and the context.

Applications / Ac	count Management 🗲 Back				
	unt Management				
Charact	-	Workflows	Realization Matri	rix	
	ilisiras filistalarinii. Aelisinii Elniferia Maaeaaliisir A heriainia Crar vehniruiti knie Mhiirarinii Mhiirarinii tiuhart Mriuri Leen	WOLKITOWS	Application Depl	loyment Architect	ure
°₽ €	None 😼 None 📷 Vey High 🔬 None 📻 Accepted		👪 Diagrams contai	ining the object	
R P	None Kone Vey High Doublessere Rok Vogent Technology Compliance		New		>
•			🔩 Share as Email		
de 🕺 🕹	ntification		🚊 Add to Portfolio		
Account N	anagement		☆ Add to Favorites	5	
Owner	anganan		Ra Update in Progre	ess	
Library	Application >		R. Financial Update	e Workflow	
wrags			la Follow		
1			💫 IT and Business	Update Workflow	
Code AccM	Version Number Application Tem 4.1	plate	Disconnect owne	ed application corr	ponent
Applicati	on Type Cloud Computing		Validation		
In House	Application On-Premises		Documentation		
	lefault font 🔍 B I U T T T Υ 🖩 Υ Ξ Ξ Ξ 🖉 ⊟ 🖽 🛣 🖉 ⊙		ь Сору		
	Neque porro quisquam est qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit		Remove		
			Explore		
BJ.			Manage		
→ Ser	vice Level Agreement				
	ctional scope				

12.2. Open objects in multiple browser tabs

To facilitate the side-by-side work either on the same screen or on different screens it is possible to open a property page, a diagram, or a report on a separate browser tab.

This is done using the "open in new browser" icon. This icon is available on both the object's floating toolbar and on the toolbar of the diagram itself.

PEX	Pro	ocess Analysis 🗮 📃			0	Q ~								ر ، ب	` ~`	🕄 Autosaved	▶8	8 (?
Process	Des	sign / Control & Risks / Risks < 🗲 Ba	ck																
	AI	ll Risks 🖌 🕣 New																	
			Local name	t			Owner	Maj	Status	Impact	Likelihood	Inherent	Control L	Residual	Risk Ap	p Identifica	tio	Risk Typ	pe
		"Risk of non-payment					Simon		Validated	Medium	Probable	High	Effective	Eow	Low	Survey		Executio	on, .
	A	Architecture lacks flexibility					Simon	~	Validated	Low	Probable	Medium	Inexistent	High	Low	Survey		Clients, I	Pro
		Bad Definition of Agency Network			68 1	: 🛛 🖍 🗄													
		Bad Image Impact					Open in new v	vindow	Submitt	Very Low	Possible	Low	Few observ	Low	Low				
		Bad Media Technology Choice						U											
		Bad Strategy Applicability																	
		Bad Technology Choices							Validated	Medium	Probable	High	Inexistent	😣 Very Hi	Low	Survey		Damage	e to
		Benefits are not being offered to all eligi	ible employees	1			Jack		Validated	Low	Rare	Low	Frequent o	😑 Medium	Low	Workshop			
	•	Budget overrun					Antoine	~	Validated	Low	Likely	Medium	Few observ	😑 Medium	High	Survey			
		Burried substances							Validated						Very Low	Survey		Damage	e ti
		Car breakdown																	
	•	Change management overload					Antoine	V	Submitt	Low	Rare	Low	Effective	Eow	Low	Workshop			
		Change risk							Validated	Low	Possible	Low	Few observ	Eow	Very Low	Survey			
		Contractual risk							Validated						Very Low	Survey		Clients, I	Pr
		Counterparty risks							Validated						Low	Survey			
		Creation of an imaginary supplier								Low	Likely	Medium	Few observ	😑 Medium	Low	Workshop		Clients, I	Pri
	•	Credit card risk					Simon	\checkmark	Submitt						Low	Audit			
	•	Dammage to physical assets					Simon	2	Validated						Very Low	Survey		Damage	e to
	•	Data encryption					Tommaso	~	Validated						Very Low	Workshop			
		Data Quality					Julius												




When using the new browser tab:

MEGA

- if the selected element is a regular object (meaning not a diagram), the new tab displays by default the property page of the object
- If the source is a diagram, the new tab will display the diagram itself as shown below...

2 • 2 🖙 × Q Q 100% × 🗄 🗖	😄 🖂 📄 🖪 🔲 🖣 Arial	 ✓ 8 ✓ M ✓ M ✓ M 	B / U & v %	IEEEI	
	Cognitional Points 31	Cryanazina Rosen 27			
 ■ ■ ■ 	D O				H

... with the ability on the top tool bar to display properties and add comments as previously seen on the main application page.



HOPEX Business Process Analysis	Q 4~ /~ 🖻 🗐 🖺 Save
	x x x x Assessment v Simula > x x 1dentification Name Organizational Process-57 y x y x Oakland City - Media Library > x x x x Status y x y y y x y y y y x y y y y x y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y y <td< th=""></td<>
	 ✓ System Used

The detached browser tab provides access to regular search capability on top to quickly drag & drop objects in properties or inside the diagram.

<u>Remark</u>. There is no Tree available on this new browser page for the moment. The search is the only way to look, find and drag & drop an object onto the diagram.



You can also open a report inside a new browser tab by using the floating toolbar. In this case the view will be quite minimalist.





12.3. Multi-combo Box improvements

Multi-combo boxes are used in several places inside HOPEX, to perform multiple selection of objects.

After "N" items are selected, and the multi-combo box is not in focus, the input field displays as many items as possible in the available space. Not all selected items can be displayed at the same time because the space is limited to the size of the input field.

If more items have been selected, an [n] More labels indicate the number of hidden items.

Possibility to switch from count number to list in the table. Users can edit the fields directly on lists without searching for the attribute in property page.

MEGA

		Sub-Entities	Processes
0 8	Legal Aid	0	0
	Legal Entity	0	0
•	Librarian	0	0
•	Library director	0	0
•	Manager	0	0
0 2	Media Library Member	0	1
0.4	Media library organizational environment	0	0
0	Middle size city media library organization	0	1
•	MyCompanya	2	1
	A Corporate Headquarters	9	0
	👗 Subsidiaries	9	0
	🛛 🐟 Belgium 🚯	1 2	11
	🗖 🌰 Brazil	Properties	0
	🗖 📥 Canada	2	2
	D 📥 Frances	3	12
	🛛 🛕 Germany	2	2



Parameter to use: Param (Display=Count)

MEGA

You can use any one among three types of parameters available. : Count, Text, Count and Text

12.4. Clickable SVG diagrams in static websites

You can now click & zoom inside the diagrams generated in SVG format.







Business Process Diagram





12.5. Style sheet enhancements

Various changes have been made to the style sheet (colors, contrast, thickness...) to provide comfort to the eye and to bring attention to important elements but in a soft manner.

- Scrollbars will now show up on focus & on hoover will expand
- Tabs UI is enhanced
- Review notes UI are modernized
- Overall font size and line height is reduced
- Focus on input fields is improved
- Background color of panel headers has been removed
- Background color of groups has been removed
- Lists show more rows as the font & line heights are reduced while maintaining sufficient line spacing

12.6. Selection of items inside a list

When selecting items in a list the top toolbar will only show relevant action buttons. The action buttons include text to be fully comprehensible.

Also, the number of selected items is shown along with the ability to cancel the selection in one single click (x).

HOPEX Business Process Analysis	≓ Bill calculation service 1 0 Q v	÷⊷ ب	e /	lutosaved	> 9	8	9 🗗	
Capability Mapping / Business Capa	vility Maps <						Ę	
» Business Capability Maps	ist Business Capabilities List							
All Business Capability M	ips 🗸 🛞 New 🔞 Remove 📄 Instant Report 🚦 🗶 11 selected						T	
	Local name †			0	wner Con	itainer		L
🔽 🤌 Bank Capability Map				\Lambda Bank				
🗾 🚽 🤣 BIAN Capability Map				📩 Bank				
🖄 🛃 🤌 Carte Capacitaire As	surance (FR)			🔺 Insura	nce			
🛃 🛛 🤌 Elementary School C	apability Map			📩 Oaklan	d City - F	lementar	y S	
👮 🛛 🤌 Media Library Capab	lity Map			🔺 Oaklan	d City - I	4edia Libr	ary	
🖗 🔽 👌 Public Security				📦 Alert a	nd Secur	ity Systen	n	
🔲 🔮 💠 Retail Corp Capabilit	y Map							
Seach and Rescue C	pability Map			📩 SAR Ar	chitectur	e		
🔽 🛷 Step 1 Capability Ma	p			Å Bank				
🖹 🛃 🤌 Step 2 Capability Ma	p			🛕 Bank				
🚊 🛛 👌 Video Capability Map	As-Is			📩 Video I	Jusiness	Transform	nat	
-@,								
<u>/</u> PB								
*								
S ≪ < Page 1 of	$1 \rightarrow \gg \beta$ Show 50 \Diamond elements				Disp	playing 1 -	11 of 11	

12.7. New process participants now follow orientation

A Participant is a swim lane in a process. When adding a participant from the Intellibar then the orientation of the participant will match the general layout of the process itself (horizontal or vertical).

The orientation of the diagram is automatically saved for each diagram and is no longer a global option.



12.8. Unified 'Digital Transformation' Desktop

The Digital Transformation Desktop, accessible via the Digital Transformation Architect Profile

Update of the desktop to latest UI/UX standards

Level 1 menus names have been reviewed and reduced to one word as much as possible, to propose a lighter user interface

_ M E G A



Integration of HOPEX IT Business Management (in replacement of HOPEX Business Architecture)

Integration of HOPEX for the ArchiMate® Framework

HOPEX Risk Mapper menus update

The Digital Transformation desktop is available out of the box and no longer requires a "solution pack" import

12.9. 'Public workplace' for all desktops

All desktops are switched to 'public workspace' except for HOPEX META Studio which stays in 'private workspace'.

As a sample, the desktop of profile 'Enterprise Architect' switches to 'Public workspace'. This means that it is no longer possible to control discard, refresh, or dispatch of workspace. Modifications are public to all since they are done

S

13. Reporting

13.1. Create a report

13.1.1. Default Report Name

By default, the name of the report is now based on the Report Template Name.

13.1.2. Automatic opening of the report – #CP4

When creating a new report from a list of reports, the report is open once the parameters are filled in.

13.2. Save as Report

Saving a report no longer raises the question of parameters.

• Bar Chart Reports

13.2.1. Removal of 0% labels – #CP4

0% labels that clutter the display and do not provide information are no more displayed.

13.3. Breakdown Report

13.3.1. Filters

Filters are automatically displayed or hidden according to the type of object displayed in the boxes. In this way only relevant filters are available.

From CP3, the behavior of the filters is slightly modified so that the filtering on components prevails over items:

If a component is filtered it is not displayed even if it contains items

If a component is not filtered it is displayed even if it does not contain any items

If a component is displayed, the items it contains are also displayed unless they are filtered

• Items – #CP4

By default the items are automatically displayed when opened.

13.3.2. Show more

When there are many items to show in the available space, then "more" link allows users to load 10 more items so that users can see the items in progressive batches.

13.3.3. Look & Feel

From CP3, the colors have been slightly revised and the boxes better highlighted.

	~				E Show le
O Application Current State :	◆ Average Level o	f Vulnerability :	✓ Application cos	st :	•
≽ Bank Capability Map					
Create 'Next Payments' R&D	ver Customer ence Brand	nd 🔶 Develop Multichannel Capabilities	Develop Partner Ecosystem	Execute Investment Products	Operate Business
	ntextualize ctions	Billing v2.0	Billing	Deliver Corporate Financing	Develop Strategic Planning
Create Rapid Proof- Of-Concept Cycle	Company.com	Create Digital Services	Broker Crowfunding	Salesforce	Word Checker
Catalog Management	eate and Maintain	Catalog Management	Splio EmailForge	Execute Consumer Investments	alignment
Word Checker	Company.com	MyCompany.com	Global Customer	Salesforce	Govern Technology Investment
Create Sandbox	nage Customer	Support Dynamic	Define Partner Aggregators	Execute Fund	Word Checker

13.4. Dendrogram Reports

13.4.1. Style

MEGA

The readability of this rendering has been improved.





MEGA

13.5. Graph Reports

The readability of this rendering has been improved.



13.6. TreeTable Reports

From CP3, the size of the arrows and the indentation have been slightly revised.

		Begin Life date	Cost	Current State
	🔻 < Bank Capability Map			
	🔻 🔶 Create 'Next Payments' R&D			
	🔷 Create Rapid Proof-Of-Concept Cycle			
	🔶 Create Sandbox			
	Crowdsource Innovation			
	🔶 Develop Customer as Innovator			
	🔶 Develop New Innovation Channels			
	🔶 Develop Risk Models			
L	🔻 🔷 Deliver Customer Experience			
	🔷 Contextualize Interactions			
	Create and Maintain Reputation			
	🔶 Manage Customer Identity and Preferences			
	🔷 Onboard Customers			

13.7. Expand the Reports

Some reports are expandable and can be displayed in full screen:

- Dendrogram
- o Graph

MEGA

From CP3, any Report Chapter can be expanded.



3D 🖌 Q



13.8. Open Report in a new tab

From CP3, any Report can be open in a new tab of the browser.

13.9. Access to Report Parameters

From CP3, when a report is displayed, it is possible to easily modify its title or parameters using a form accessible from a new 'Display Report Parameters' button.



13.10. Instant Reports

MEGA

13.10.1. Matrix and Table type Instant Reports

From CP3, a new option enables to display the icons presented in the matrix or table.

Table		
∧ Configuration		
Configuration Filters		
Add Series		
Table Columns		Name
	C	Application
Application		Sort Ascending
Rating		Sort Priority
Technologies		1 🗘
Vendor		Group
Cost	1	Yes
		Value Computation
Show Icons		
Limit the table to the first 50 rows		

13.11. Volume limits for Reports

13.11.1. Interaction Improvements

The reloading of reports has been limited so that the following actions do not trigger a refresh:

• switch to full screen



- filtering of the data displayed in the report
- Re-open the same report

13.11.2. Limits of GraphSet

Volume limits for GraphSets are available as parameters. These limits trigger a display for the end user.



13.11.3. Limits of TreeSet

 Fix the limit for TreeSet Nodes

 Image: Solution of the limit for TreeSet properties

 Image: Solution of the limit for TreeSet properties

 Image: Solution of the limit for TreeSet properties

 Image: Solution of the limit for the li

13.11.4. Limit of TreeMaps

For readability reasons, the number of boxes displayed at a given level is limited to 100 and a message is displayed below the report if this limit is exceeded.

13.11.5. Limit of Dendrogram

The number of displayed objects is limited to 30 000.

13.11.6. Increase of Report DataSet Limits

13.11.6.1. Volume

The volume of a Report DataSet is now limited to 100k rows and 50 columns.

Fix the limit for Report DataSet rows

 100000
 \$

 Fix the limit for Report DataSet columns

 50
 \$

The cell text size is limited to 32767 characters

13.11.6.2. Export (CSV)

If the limit is reached this case file is not generated, a message warns the user that the limit is reached.

13.11.7. Increase of Matrix Report Limits

The volume of Matrices is now limited to 50k cells.



13.11.8. Supervision Alerts

Supervision Alerts have been added for Report DataSet, GraphSet, TreeSet.

Example:

Report DataSet Generate (Alert): means that Report DataSet has been completely generated but the limit set as maximum has been exceeded (either the limit has been disabled or increased).

Report DataSet Generate (Truncated). It is of type "error". The Report DataSet is incomplete.

14. HOPEX Customizer

14.1. Breakdown Reports

From a Preview page of a TreeSet Definition an Instant Report feature allows to define Breakdown Reports



It is possible to choose the elements that are displayed in the boxes and for those the relevant indicators.

						0
Configuration						i.
IB levels at Opening:* 3	Apply	Levels All V Show Function	onality ×	•		
tems		\triangle Capability Effectivness :	~			
Name 🕇	Selected T	Bank Capability Map				
<		Create 'Next Payments' R&D	Deliver Customer Experience	Develop Market and Brand	Develop Multichannel Capabilities	Develop Part
+ Add	т	Access to tickets prices	Contextualize Interactions	Define Business Direction	Create Digital Services	Broker Cro
Shape Field → ∆ trian E Cap	ability Effectivness	Add Information into a Repository	Create and Maintain Reputation	Develop Product Strategy	Support Dynamic Facilities	Define Part
Kem Color: None	~	Create Rapid Proof-Of- Concept Cycle	Manage Customer Identity	Market Products	Support Multichannel	Develop Ne
	<∥→	Create Sandbox	and Preferences		Payments	Partners
		Crowdsource Innovation	Onboard Customers	Operate Competitive Intelligence	Support Universal Bring Your Own Device (BYOD)	Manage Ch
			Personnalize Risk Reputation and Fraud Mgmt	Operate Customer Intelligence		Support Pe Partners
		Develop Customer as Innovator	Support Personalized	Set Pricing		Use Credit I

More possibilities are offered at the level of the Report Template:

Choose the item to display in the boxes



Choose the items indicator and their shapes

Color the items color according to one of the indicators

14.1.1. Breakdown Report Style Parameters

The current available parameter is:

- Min Column width
- Display icons
- Show Items

14.2. Gauges Reports

It is now very easy to define a new Gauge report representing several occurrences, just choose a query in the studio:

■	Studio / Queries < 🗲	Back	
	«	Queries without mandatory parameters ▼	
		□ <u>Name</u> ↑	Stereotype
₩.	Report DataSet Definit	Q application s	Q
10	GraphSet Definition	□ 🔎 IT PM - My Application Systems	
•#•	TreeSet Definition	□ □ APM - Get Application Systems in Production	
	Report Template Defin		
Ð	Queries	□ 🔎 IA - Imported Scenario of Logical Application Sy	
۲	Web Site	$\square ho$ IA - All Scenario of Logical Application Systems	
	Studio Reports	$\square ho$ IA - Owned Scenario of Logical Application Syst	
> 🗐	Other Reports	$\square \mathcal{P}$ IT PM - Application Systems late update (Financ	
*	Favorites	□ □ IT PM - Application Systems to Validate (IT and QUERY	
ß	History	□ Ω IT PM - Application Systems to Validate (F	v gauge report

The Gauge Report is done:



Application System to Validate



The corresponding Report Template can be modified to change the default behavior for example, change the max value or define a specific drill down.

\otimes	HOPEX REPORT STUDIO	Select an object type	A 8 0 S
≡	Studio / Report Template Def	inition / Application System to validate 🗲 Back	C · · · 🔽 🖓 🔂 🛱
	«	🖿 🖿	Application System to validate : X
曝光	Report DataSet Definit GraphSet Definition	Pryork Comparison Private Report Template Private Report Template	Value: IT PM - Application Systems to Validate (IT and Business data)
•1.	TreeSet Definition	My Report Templates	Value Computation: Default
☆ ₽		Application System to validate-1	Max value:
8		Others HOPEX	Specific Drill-down:
> 🗊	· · · · · · · · · · · · · · · · · · ·	Public Report Data Views Report Styles	_Settings [2] Ø (
* ©		ն 💼 MetaTest	(Gauge) ValueComputation=default DrillDown=yes

See Standard Report Template: IRM - Regulation Data Conversion

14.3. Dendrogram Reports

From the preview page of a Treeset Definition the "instant report" function allows to define a dendrogram and to choose the number of unfolded levels at opening and the properties available in the tooltips of the objects

Configuration		
NB levels at Opening:* 2 \$ Properties The Reorganize	T	Create 'Next Payments' R&D 🔶
Name 🕇	Selected	
 Business Value 		Deliver Customer Experience
 Cap Effectivness 		Develop Market and Brand Develop Multichannel Capabilit
 Cap Efficiency 		Execute Investment Products
 Capability Effectivness 		Operate Business 🤌 Proactively Detect and Resolve 🍐

More possibilities are offered at the level of the Report Template:

- Add Filters
- Display a property instead of the object name
- Change the object picture



- Add style elements
- Condition some styles

14.3.1. Dendrogram Style Parameters

The current style parameters are:

Arc or Node Colors

Display Mode: Horizontal / Vertical

14.4. TreeMap Reports

From the preview page of a Treeset Definition the "instant report" function allows to define a TreeMap and to choose the number of unfolded levels at opening and the properties available in the tooltips of the objects.

NB levels at Opening:* 1			Number of displayed le	evels 1 🗸 Display	criterion Numbe	r of components 🗙
Properties				Bank Capabi	lity Map	
Reorganize		T	Create 'Next Payments'	Deliver Customer Exper	Develop Market and	Bra Develop Multic
Name 🕇	Selected					
 Business Value 						
 Cap Effectivness 		Create 'Next P	ayments' R&D	11 %	11 %	7 %
 Cap Efficiency 		Number of compone Cap Effectivness	ents 6			
		Cap Efficiency				
			Develop Partner Ecosyster		Proactively Det	Provide Account Servi
				1%		
			Execute Investment Produ	1%	11 %	15 %
			Operate Business		-	
			1	1%		

More possibilities are offered at the level of the Report Template:

- Add Filters
- Display a property instead of the object name
- Add style elements
- Condition some styles

14.4.1. TreeMap Style Parameters

The current style parameters are:

- Box Colors
- Box Border Color or Thickness
- Proportional Text Size

14.5. TreeTable Reports

From the preview page of a Treeset Definition the "instant report" function allows to define a TreeTable and to choose the number of unfolded levels at opening and the Properties displayed in column.



Name 1 Selected Financial Impact Image: Create 'Next Payments' R&D	Name Selected	Name ↑ Selected > & Bank Capability Map Financial Impact ✓ > & Create 'Next Payments' R&D Capability Effectiveness > & Create Rapid Proof-Of-Concept	vels at Opening:* 3	*	
Name 1 Selected Financial Impact Create 'Next Payments' R&D	Name ↑ Selected Financial Impact ✓ Capability Effectivess	Name 1 Selected Financial Impact Impact Capability Effectivness Impact	Reorganize		T
	Canability Effectiveness	Capability Effectivness Capability Ca			
		Cycle		_	

More possibilities are offered at the level of the Report Template:

- Add Filters
- Add style elements
- Condition some styles

14.5.1. Group properties in a single column

	Performance	Business Value	Efficiency	Risk
🕨 🛷 Bank Capability Map				
🕨 🔷 Create 'Next Payments' R&D	High 1/19/2017	High	Medium	Medium
🕨 🔷 Create Rapid Proof-Of-Concept Cycle	Very Low 1/19/2017	Very Low	N/A	Very High

The parametrization defines the columns and their content:

_	Columns	
Colun	nns	
€) New 📑 Reorganize 📮 Properties 🛞 Remove	
	Local name 🕇	Cell Content
٥	Performance	Performance Assessment Date
	Business Value	Business Value
	Efficiency	Efficiency
	Risk	Risk



14.5.2. Display occurrences in a cell

This example displays the set of functions expected by a capability



The parameterization defines the column that is displayed and the column content. The functionalities are displayed as properties and not displayed in the tree.

Report Tree Node	Display	Display by default	Display Property
		No	
Business Capabilit	Default	Yes	
B component	Default	No	
Business Capability	Default	Yes	
Functionalities	Hide Node	Yes	Functionalities
		ß	
	Cell Content	Multiple Columns Hea	
	Business Capabilit B component Business Capability	Business Capabilit Default B component Default Business Capability Default Functionalities Hide Node Business Line Default	No Business Capabilit Default Yes B component Default No Business Capability Default Yes Functionalities Hide Node Yes Business Line Default No



14.5.3. Build matrices

This example displays the set of functions performed by a capability in relation to those expected

	Access to tickets prices	Allow Service Accesses Through the Web	Print Purchase Orders
🕨 🔷 Bank Capability Map			
🔻 🔷 Create 'Next Payments' R&D	×		
🕨 🔷 Deliver Customer Experience			
🕨 🔶 Develop Market and Brand			
🕨 🔷 Develop Multichannel Capabilities			
🕨 🔷 Develop Partner Ecosystem			
🕨 🔷 Execute Investment Products			
🕨 🔷 Operate Business			
Proactively Detect and Resolve Risk			
🕨 🔶 Provide Account Services			

The parameterization defines the element of the TreeSet that are displayed and the collection used to build the different columns:

— Tree			
Display: TreeTable NB levels at opening: 3			
	Report Tree Node	Display	Display by default
😑 🚞 BZX - B cap			No
Business Capability Map	Business Capabilit	Default	Yes
B component	B component	Default	No
📕 📃 🛛 Business Capability	Business Capability	Default	Yes
Expected Functionalities	Functionalities	Hide Node	Yes
e 📃 realising agents	realising agents	Hide Branch	Yes
🔄 📃 Realised Functionalities	functionalies	Default	Yes
<			
- Columns			
columns			
• New			
Local name 🕇	Cell Content	Multiple Columns	Header
Functionalities		Expected	Functionalities

14.5.4. Style Parameters

New style parameters available and allow to change:

Text font, size alignment or color for the table, column, or cell or title Border or Background Color for the table, column, or cell The Header of Rows, of Columns The Objects display menu and icon Row height, Column or Table width Show/hide Column Title, Title

14.6. Matrices & Table Reports

14.6.1. New Horizontal and Vertical Headers

		—— Residual Risks ——							
		Je	en Low L	on he	aurr Hit	5 J	or the Su	n	
ks	Very Low	4	0	0	0	0	4		
Risks	Low	0	6	4	3	0	13		
	Medium	0	0	6	4	0	10		
Inherent	High	0	2	0	3	3	8		
he	Very High	0	0	1	0	4	5		
Ţ	Sum	4	8	11	10	7			

At Report Template Level, Code templates can be used to define the titles and Headers of the Matrices or Tables.

14.6.2. Default display

All Matrix or Table reports built from the Studio are modified and parameters allow to control this display:

Object icons are no longer displayed.

Matrix headers are tilted.

14.6.3. Matrix & Table Style Parameters

New style parameters available and allow to change:

- The Display of object icon
- The Column Header Text orientation
- Add a Header on Column, on Rows

Remove null values in heatmaps or table – #CP4

The parameter "Display blank for zero value" allows to display an empty value when the value of a table cell is = 0.



14.6.4. Sort Axis in specific order

Workflow instances - Actions (Recommandation)

From CP3, it is possible to sort an axis on a specific column of the table to avoid the default sort (name of occurrence)





This can be done by giving a sorting criterion in the report view:

J Workflo	w in progress			: ×
Chart 🗸				
Chart Type:	Bar Chart			
Category:	Owned Status		~	Show all values
Sorting Criteri	a: order			~
Legend Entrie	15			
Name	t	In Legend	Second scale	T
💻 Work	flow instances::Workflow in progress::order			
Work	flow instances::Workflow in progress::Owned Status			
= Work	flow instances::Workflow in progress::Workflow St			

14.6.5. Sort matrix in specific order – #CP4

It is possible to sort a column content on a specific criterion to avoid the default sort

latrix 👻				
Add row Add column Add cell Reorder				
	C	Data Source Item:*	WF - Status - MC	~
Cells (1)		Sort:	Ascending	~
WF - MetaClass CRUD		Sorting Criterion:		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Columns (2)				Ľ
- VF - Status		show all values		
WF - Participant / Non Participant				
Bows (1)				
WF - MetaClass				
				OK Cancel A

14.7. TreeSet Definition

14.7.1. Sort Data

The sort order is kept in TreeSet and will be used by default in all reports using these data.

The order of the TreeSet Collection is defined by:

Order of the MetaAssociationEnd

Sort instruction defined in Queries



14.7.2. Group objects in Tree Reports

It is possible to perform groupings in the 'tree' reports by using folders.

Definition 🗸								
😑 📄 TreeMap Issues by Impact								
🗖 🚞 Issue with Medium Impact								
Issues with Medium Impact								
🗖 🚞 Issues with High Impact								
Issues with High Impact								
🗖 🚞 Issues with Low impact								
Issues with low impact								

Then the folders are used in the corresponding reports. This example shows the issues grouped by impact:

Number of displayed levels	1 🗸	Display criterion	Number of components	~
		Issues by Impa	ct	
Issues with Medium Impact 36 %	Is	sues with High Impact	1 %	Issues wit

14.7.3. Additional properties

All MetaAssociationEnd with Card-max 1 can be used in the Property definition.

Example: Display the Declarant's Entity of issues

	Declarant's Entity
Issue with Medium Impact	
F Bills not approved	Italy
Customer claims not treated	UK
Falsified Credit Card	Germany
🗲 Major proof falsified	Italy
F Bad translation	
F Credit card expired	France

MEGA

14.8. DataSet Definition

14.8.1. Help in UI

Comments have been added to document some elements presented in the UI:

≣ Vendo	or		1	×
Characterist	ics 👻			
Local name: Vendor				
Owner: Report DataSet Str		ucture 🗸	Report DataSet Structure	>
Parent Report DataSet Collection:		Technologies		>
Parent MetaClass:		Software Technology		
Parameter Na	ame:			
 This parameter name is associated with the current occurrence during the Report Dataset calculation. It can be used in queries (using "Select where name = &ParameterName") to populate sub collections or their neighboring collections. When there is no ambiguity the parameter name is not necessary. 			×	
Visible:*		Yes		~

14.8.2. Filter Data from Abstract MetaClass

The use of generic MetaAssociation requires to filter sometimes the data to address only one of the subtypes of the target abstract metaclass.

Example: To display in a column all the technologies supporting an application and in another one a property concerning only the software technology it is necessary to filter the collection:

Definition 👻				
b b				
🛓 📃 Application		Application		
🔮 🚞 🛛 MetaAttribut	2	Supporting Software Technology		
Creation of Report DataSet Collection				
Owner: Report DataSet Structur		Applications technologies		
Parent MetaClass:	Softwar	e Technology Building Block		
Source MetaClass:		27		
Populating Collection Para	meter: Applic	cation		
		are Technology		
Populating Query:	Softw	Software Technology Stack		

14.8.3. Use any Query to build Report DataSet Collection

It is now possible to use queries implemented by macros to build collections.

14.9. Report Parameters

14.9.1. Use multi-combo-box for report parameter

All parameters based on metaclasses whose declared volume is below 200 will be presented automatically as a multi-combobox.

	Create Report (Person by Profile)					
N	ame:	Pe	rson by Profile			
	— Per	rson	by profile			
	Profile:		Application Owner $\ {\bf x}$	Application Portfolio Manager $ \times $	~	
				Previous	Next OK Cancel	

14.10. Text in Reports

From CP3, it is possible to display text in the reports. The view comment is automatically displayed above the chart.

Report		۲
		Ð
Applications by Vendors 0	♦ 0 ÷ 2	്
"Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed d aliqua. Ut enim ad minim veniam, quis nostrud exercitation ull Duis aute irure dolor in reprehenderit in voluptate velit esse ci occaecat cupidatat non proident, sunt in culpa qui officia dese	lamco laboris nisi ut aliquip ex ea commodo consequat. illum dolore eu fugiat nulla pariatur. Excepteur sint	^
	I	÷
3%		
11%	Empty]: 63%	
	■ IBM: 3%	
16%	MEGA: 2%	
63	Microsoft: 16%	
63%	Oracle: 11%	
3%	Redhat: 2%	
	SAP: 3%	
		~

14.11. Definitions Checking

Both HOPEX Customizer and HOPEX Customizer Publisher profiles have now a dedicated modeling regulation active by default.

Modeling Regulation have been added to help in the definition of:

- Report DataSet
- Report GraphSet
- Report TreeSet

Reports Customisation Regulation

GraphSet Regulation

Result	Rule Definition	Diagnosis
8	<i>Requirement</i> Only candidate MetaAssociationEnd can be used as provider	

14.12. API - Export Report DataSet in Batch Mode

To export any Report DataSet in CSV format from HOPEX use the **CSVExport** Operator.

14.13. Security updates impacting Reports integration

In order to improve CSP compliance and performance, reports integration has been changed in this version.

It is necessary to review all custom Reports integration that use HTML Formatters.

A technical document detailing impact and procedure is available.(see <u>Updating virtual</u> <u>reports</u> document)

In the future, also iFrames will be supported by the standard HOPEX CSP. This also impacts specific renderers, for example on the use of script tags and inline scripts.

14.14. Diagram Comparison Renderer

A new Renderer is available in Java to build Diagram Comparison Reports.

The functional code can define the layers that appear as different modification (icon, name, colors) in the renderer.

The Links can also be highlighted.



15. Common Features

15.1. Options

15.1.1. Organization

The organization of the options has been reviewed and notably the set of options valid only in the Windows front-end has been moved to the compatibility group.



15.1.2. New visibility Options

The classification of the metamodel by level (beginner, advanced, expert) is removed and replaced by the distinction between the "Business" or "Technical" metamodel.

Therefore, the metamodel access option is no longer available, and replaced by the "Display technical metamodel" option activated for all administrator and customizers profiles.

The "Display Advanced User Interfaces" option enable the extended view of options as well as some other specific user interfaces. This option is activated for all administrator and customizers profiles.

The "Display Administration Properties and links" option activates the Administration Tab and all his content and activates the "See Administration Properties" in the Advanced Search Tool. This option is activated for all administrator and customizers profiles.

15.2. Passwords management

From HOPEX V4 CP6 or HOPEX #CP3, password policy has change. All newly create user and default user have a password.

15.3. **Default password for new environment**



To enforce security at environment creation, default users now have password.

Person(system)	login	Default password
HOPEX Administrator	System	Норех
MEGA	MEGA	Норех

15.4. Password for new user

The rule described after are valid for new or existing environment. Check that your user creation process is compliant with this new version.

15.4.1. SMTP Server is Enabled

To enforce security at user creation from thick or thin client an e-mail is sent to the new user to manage its password and security question.

15.4.2. SMTP Server is Disabled

To enforce security at user creation from thick or thin client the administrator set a default password that need to be change at the first connection on the thin client.

15.4.3. **Notes**

User "SysMA" that is not accessible for interactive connection must not have any password.

15.5. Permission Improvement

A new feature allows to define the set MetaClass that will be "Searchable" that is available in the Desktop Search Bar for a given Profile.

Cobject UIs ×			
MetaModel:*	~		
MetaClass			
	T		
Name Permiss App Syst Deployment Component	ion *CRUD		
 Application 	-RS		
	_		
 Application Advice 	*CRUD		
 Application Data Channel 	*R		
 Application Data Collection 	*R		
 Application Decision 	*CRUD		



In the Application Designer Desktop:



All "Readable" Metaclass remains available in the Advanced Search Tool.

By default, a new MetaClass is not Searchable, the default Permission remains "CRUD". A conversion tool considers all the Custom MetaClass to make them "Searchable".

15.6. Explorer Tool

By default, the "Explorer" tool is only available for Customizer profiles and Functional Administrator profiles. Other profiles need to select the "Activate Explorer" option (Tools > Explorer).

15.7. Search Tool

By default, all metaclasses are available in this tool except the abstract metamodel and the Building block role metaclasses. The option "View all object type" makes them available.

15.7.1. Nearmatch

A new operator has been added in ERQL syntax, allowing to make fuzzy match search on attributes of a metaclass. It also applies stemming rules to search word of the same family. The nearmatch operator is only available on indexable metaclasses and metaattributes.

15.7.2. Search bar

If the repository is indexed, the nearmatch is used to enhance the performance of the search bar for Name containing and Comment containing also in the Advanced Query in the Wizard Mode and ERQL Mode.

From HOPEX #CP4, you can also ask for an exact match on the name and comment.



15.8. Administration.exe

To engage the use of HOPEX WEB GUI, several menus of Administration Windows app has been deactivated. (HOPEX #CP3 and higher)

"Repositories/.../Locks/Manage"

"Repositories/.../Workspaces/Manage"

"Repositories/.../Repository Snapshots/Manage"

"Repositories/.../Repository Snapshots/Configuration of Snapshots creation software"

"User Management/Users/Manage"

"User Management/Assignment of Profiles/Manage"

"User Management/Profiles/Manage"

"User Management/UI Access/Manage"

"User Management/Authentication/LDAP Servers"

"User Management/Authentication/Manage Authentication Group"

"User Management/Authentication/Manage Authentication Parameter"

🚳 HOPEX - Administration			×
File Help			
HOPEX			
HOPEX			
៉ 🔯 Environments			
🚊 🛃 C:\MEGA\Hopex Application Server\Databases\5002	!\Enviro	nment\H	AS_5002
🚊 🤬 Repositories			
😥 🙀 SystemDb [EN]			
🚋 📆 EA [EN]			
🛓 🚛 SOHO [EN]			
🚊 🤠 User management			
- 📇 UI access			
Data reading access			
Authentication			
			x
This 'Users' folder enables administration of all users that are no environment.	ot admini:	strators of	f this

These menus are not deactivated if one of this condition is not fulfil:

Administration.exe is parts of an HAS instance HOPEX Web Front-End module "hopex.dtpx" is ready

🛛 Ready

HOPEX

hopex.dtpx

HOPEX Web Front-End V5.



• The Environment activity is not "Active Environment"

3	Open	1	
	Close		
	Reports •		
	Options •		
	Metamodel		
	Environment automatic update		
	Delete reference		
	Remove not referenced repositories		
0	Configure SQL connection		
	Perform SQL conversion on the repository		
	Environment activity	~	Active environment
_			Active environnement with Windows Front-End only
			Inactive environment

16. Deprecated & Removed Products

16.1. Removed Products

HOPEX Business Architecture (superseded by HOPEX IT Business Management)



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