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1

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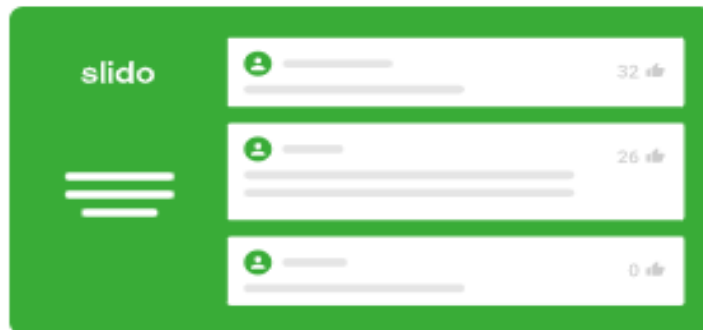
2

Send or upvote the questions
you want to hear answered



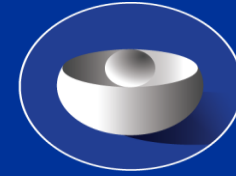
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Questions will be shown on the screen
and **managed live in the Q&A session**



4

**Questions not addressed
during this session** may be
addressed in **subsequent
webinars** and/or in **FAQ** document
in SPOR Portal



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

SPOR webinar: How to access and use SPOR API

20 April 2023



SPOR week is a **full week of webinars** during which EMA's Regulatory Data Management Service team talks about all aspects of regulatory data management and how it works today

 Webinar title	 Date	 Time
<u>SPOR and XEVMPD Data Governance</u>	17 April 2023	10:00-12:00 CET
<u>Service Desk for SPOR and XEVMPD</u>	17 April 2023	14:00-16:00 CET
<u>Referentials Management Service (RMS)</u>	18 April 2023	10:00-12:00 CET
<u>Organisation Management Service (OMS)</u>	18 April 2023	14:00-16:00 CET
<u>Substance Management Service (SMS)</u>	19 April 2023	10:00-12:00 CET
<u>Product Management Service (XEVMPD)</u>	19 April 2023	14:00-16:00 CET
➤ <u>Substance, product, organisation and referential (SPOR) application programming interface (API) - SPOR API</u>	20 April 2023	10:00-12:00 CET
<u>EMA Account Management</u>	20 April 2023	14:00-16:00 CET



Introduction to and update on the SPOR API v1



Provide concrete examples of how to use the API



Guide API users to relevant documentation and support



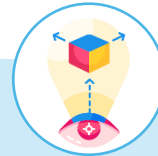
Share latest SPOR API news and planned features and improvements





Why use an API?

API – A definition (1/2)



- Some aspects of an API (from [Wikipedia](#))
 - "It is a set of **routines, protocols**, and tools for building software applications."
 - "It expresses a **software component** in terms of its **operations, inputs, outputs**, and **underlying types**."



- An API is *not*:
 - A software component that you install on a computer.
 - A process that automates human activities.
 - An end-to-end system where your NCA is 1 end and EMA the other end.
 - "Active Product Ingredient"

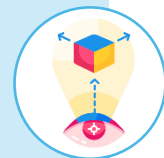
API – A definition (2/2)

*"It expresses a **software component** in terms of its **operations, inputs, outputs, and underlying types.**"*

 Element	 Description
Software component	System hosted at EMA
Operations	Search, read and write
Inputs	Search terms, documents, metadata attributes
Outputs	Documents, metadata attributes
Underlying types	PSUR (eCTD & NeeS), Assessment Reports, AR Comments, Recommendation, substances, products, ...

API – Why to use it?

- APIs are ideal for machine to machine integration:
 - It offers a set of services to exchange data based on parameters that identify the business objects
 - Returns responses structured conveniently to be parsed using popular programming languages
 - It does not focus on human interaction and presentation, but rather in machine-processable presentation
- APIs let clients consume the data according to their business needs:
 - In big chunks and short number of interactions
 - In small chunks, as soon as they are available
 - Of only certain entities that they are interested in
 - Although APIs are machine oriented, often they are human-readable to simplify their adoption and allow other use cases (low code integrations, BPM engines, exports for human users...)





API – How to start with them

1. Read a brief overview on API types and use cases

- [What is an Application Programming Interface \(API\)? | IBM](#)
- [What is an API? | \(API\) Application Program Interface Definition \(axway.com\)](#)

2. Choose a tool to start requesting to public APIs

- *Postman is a complete and free application* ([Sending your first request | Postman Learning Center](#))



3. Explore free APIs

- [Dog API by kinduff](#)
- [Free Dictionary API](#)
- [API - RijksData \(rijksmuseum.nl\)](#)
- ... or many more ([GitHub - public-apis/public-apis: A collective list of free APIs](#))

API – Users and technicalities



Users:

- Registered users and with appropriate capabilities
- User must be registered in the EMA Account Management Portal
- The API access is authorised if
 - The user belongs to an organisation
 - The user can demonstrate the understanding of the API specification



Technicalities:

- Protocol: HTTP (secured) with basic authentication
- Message representations: XML (default), JSON, Zipped CSV (in some endpoints)
- Architectural style: RESTful Web Services.

The SPOR API comes in two parts: V1 and V2

SPOR V1:

Provides access to RMS and OMS resources, not FHIR

- Access granted to any user upon request – see next section

V1



SPOR V2:

Provides access to PMS and SMS resources

- Both SMS and PMS are currently under development of significant features including their API
- Both APIs implement the FHIR Standard
- OAuth2 authorisation approach for when fully public
- SMS – access granted to NCAs and EMA – Request to the EMA Service Desk
 - *NCA and Industry access management on roadmap for Q4 2023*
- PMS – at the moment, access granted to EMA only
 - *NCA access management on roadmap for Q4 2023, Industry in 2024*

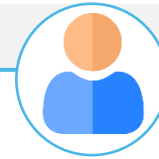
V2





350,000 API calls in a 24h on average

- 95k-100k OMS API calls
- 140k RMS API calls
- 110k coming via WebUI



135 Registered accounts for SPOR API v1 serving over 57k users



Busiest periods for RMS

- 2AM-4AM
- 6AM-8AM
- 10AM-12PM



Busiest periods for OMS

- 8AM-10AM
- 10AM-12AM
- 6AM-8AM



Request access to SPOR API



SPOR Portal

- RMS & OMS dictionary are available on the (Production) SPOR Web portal
 - <http://spor.ema.europa.eu/sporwi/>
- SMS Substances export is also available here on its own page <https://spor.ema.europa.eu/smswi>
- Please read the documentation available in the SPOR Portal (Documents->View), particularly:
 - Z3 - SPOR API Access - Q&A
 - Z4 - SPOR API Access - Webinar 27 November 2017
 - Z5 - EMA - API General Terms of Service - Terms of Use
 - Z6 - SPOR API Access Request Form
 - Z7 - SPOR API Access and Usage - Webinar 18 March 2022



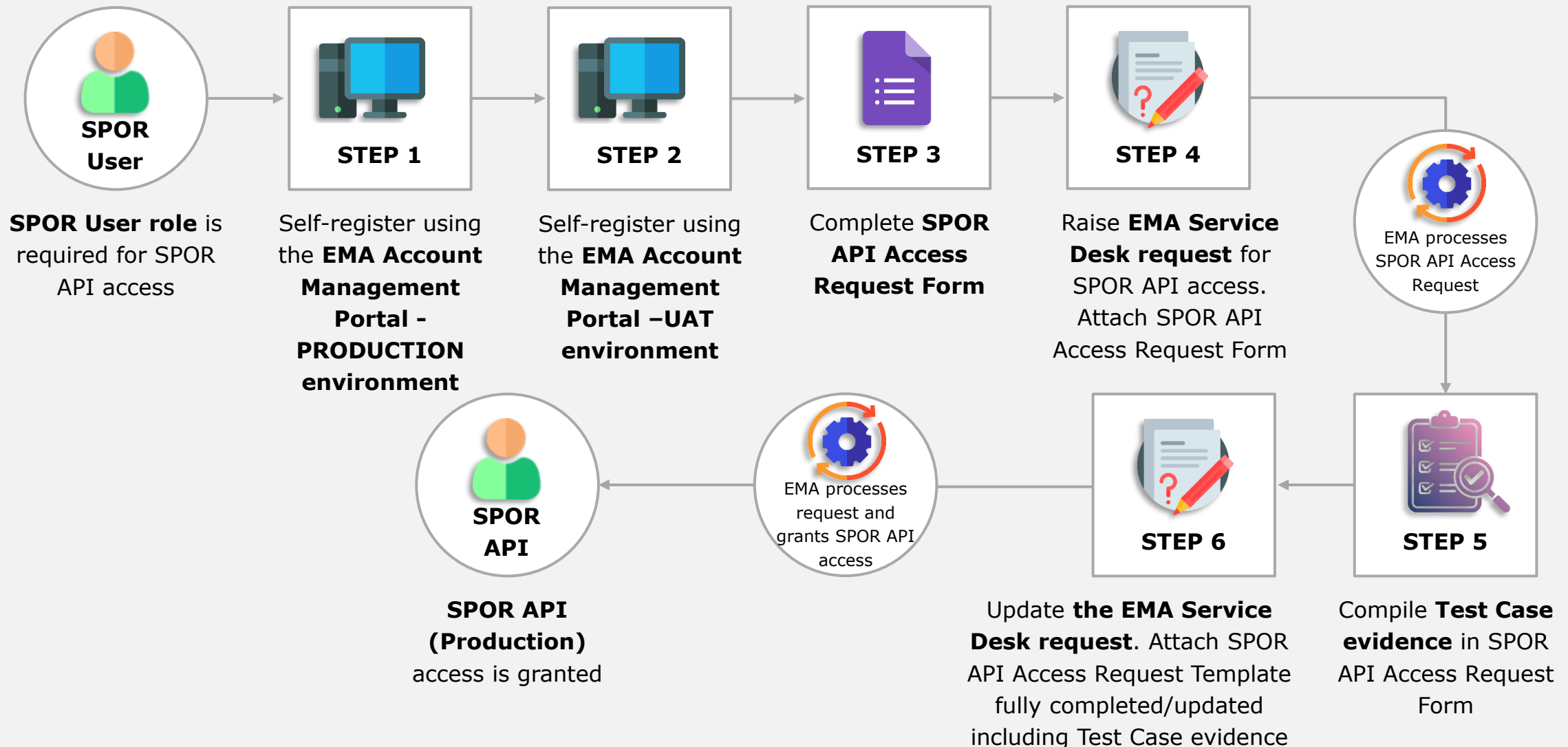
EMA Account Management Portal

- EMA Account management system that provides functionality for users to manage their accounts, passwords and access to various EMA applications (including SPOR);
- There are two different environments which API access requestors will need to use to complete their registration process:
 - UAT environment: <https://register-test.ema.europa.eu/>
 - PRODUCTION environment: <https://register.ema.europa.eu/>



EMA Service Desk Portal

- EMA Service Desk for information technology (IT) systems.
- <https://servicedesk.ema.europa.eu/>
- API access requestors will need to use this system to request API access





SPOR User role is required for SPOR API access



Self-register using the **EMA Account Management Portal - PRODUCTION environment**

1. Self-Register using the **EMA Account Management portal - PRODUCTION environment**:
 - Include your organisation and API e.g. "PharmaCo Ltd. API" as first and second names so that the username is constructed from those values to simplify identification.
 - A unique e-mail address should be used for the API. Do not use somebody else's personal email address as they may use it to self-register in future at the EMA Registration Portal.
 - Affiliate yourself to the right Organisation. If the Organisation does not exist please submit a Change Request to OMS.
 - Once self-registered, request an Industry User role (or NCA Translator / NCA User role). Note that the organisation must have first registered a Super User.

Even if you are already a registered user (i.e have valid user credentials) a new dedicated user should be created for SPOR API (PRODUCTION) access.

This user needs to be affiliated to the relevant Organisation to be able to see the corresponding Change Requests (CRs).

A SPOR User role (Industry Super User/User; NCA Super User/User/Translator) is also required to enable adequate access/permissions.



Self-register using the **EMA AM Portal –UAT environment**

- Self-Register using the **EMA Account Management portal - UAT environment**:
- The registration process needs to be replicated as in the production EMA account management portal. However:
- if the Organisation does not exist please choose any available Organisation
 - The Organisation will still need to have a super user assigned to it before you can submit an Industry User / NCA translator or NCA user role.

*To receive SPOR API access you will need to perform certain Test Cases in a dedicated TEST/UAT environment.
This step may not be required if these Test Cases have already been executed e.g. by your Software provider.*



Complete **SPOR API Access Request Form**

- The tab "SPOR API Access Request" must be completed before submitting the request for access to SPOR API - See below instructions for "SPOR API Access Request"
- The tabs "RMS Test Cases" and "OMS Test Cases" can be completed before/during the request for SPOR API access and must be completed for access to be granted - See below instructions for "Test Cases".

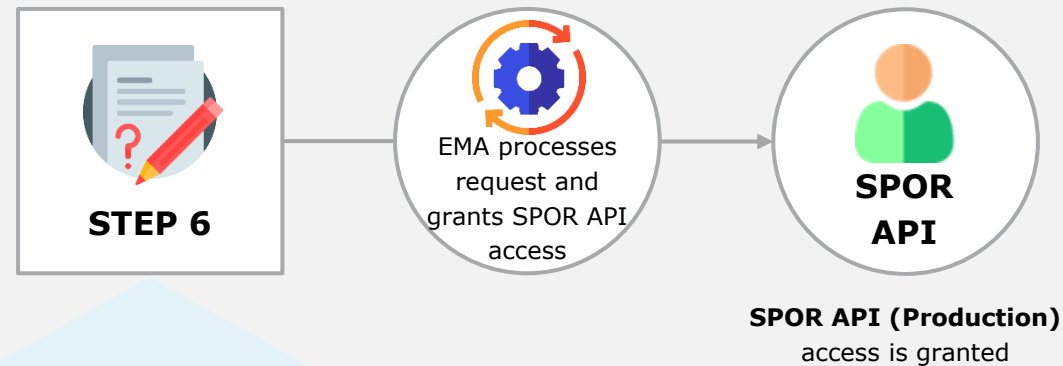
- Raise [EMA Service Desk request](#) for SPOR API access.
- Attach SPOR API Access Request Form

Compile **Test Case evidence** in SPOR API Access Request Form

Compile **Test Case evidence**

- Verify the integration with UAT API and perform relevant Test Cases
- Compile test evidence or relevant references
- Complete SPOR API Access Request Form - RMS Test Cases and/or OMS Test Cases or SPOR API Access request

*If you do not need to carry out the Test Cases (e.g. they were previously carried out by your Software provider), you should still submit evidence of the Test execution (reference to the original request) and of your relationship with such 3rd party provider.
You can do this together with step 3.*



Update **the EMA Service Desk request**.
Attach SPOR API Access Request Template
fully completed/updated including Test
Case evidence

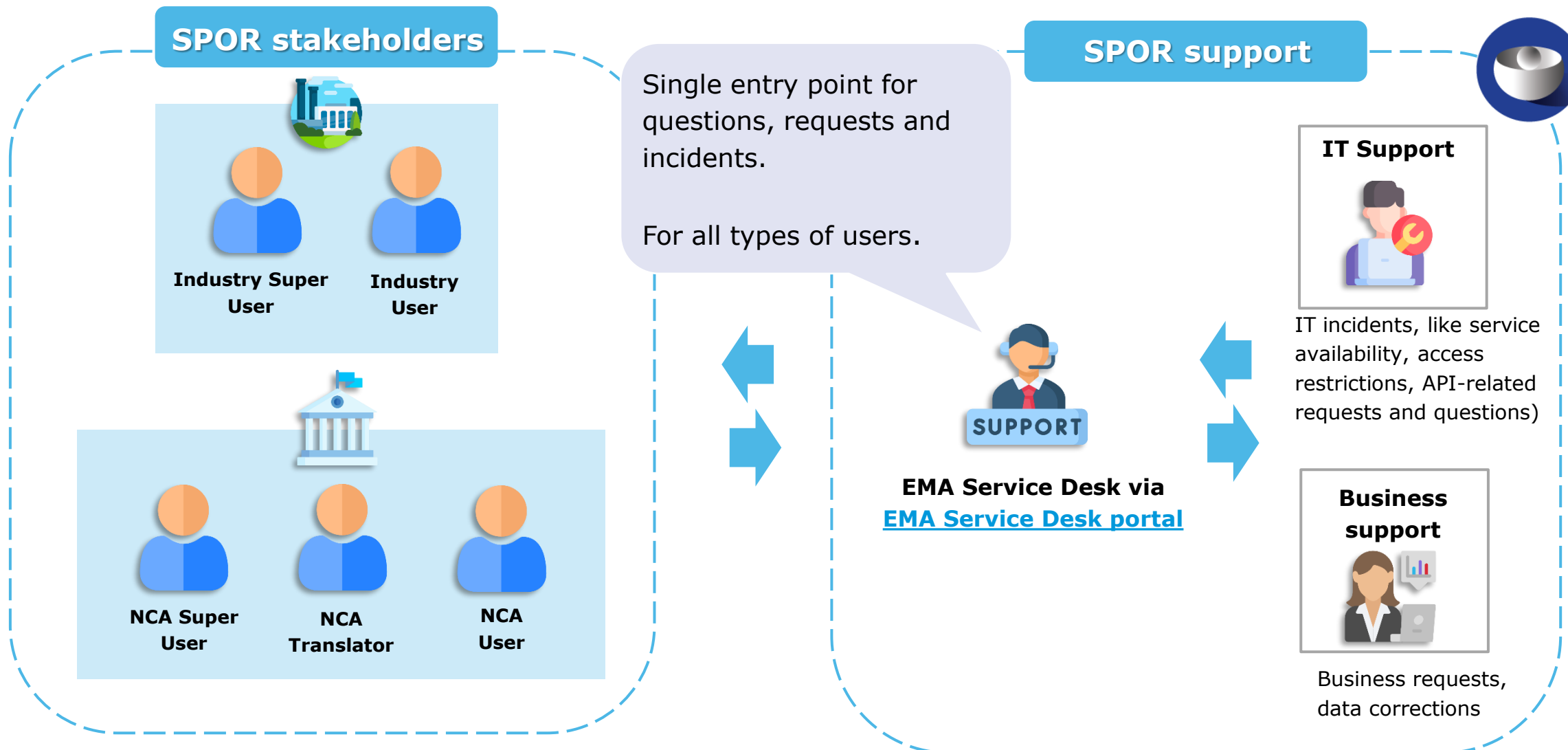
Update the [EMA Service Desk request](#) (or raise a new one) for SPOR API access:

- Attach the SPOR API Access Request Form fully completed/updated including Test Case evidence.

*Outputs from the UAT test cases must be submitted with a final request to confirm access to the Production API.
EMA will validate test outputs and process the API access request.*



SPOR Help, Support & Communications



Overview of the process



- The health of the system is being continuously and automatically monitored
- If issues are identified, our team is notified and will analyse and initiate corrective action
 - Within EMA business hours: Immediately
 - Outside of EMA business hours: As soon as possible
- If the issue cannot be resolved within a limited period of time (typically 4 hours), a notification is posted in the ServiceNow portal, informing about the issue and, if appropriate, any workarounds.
- Over the last few months, the system has been able to recover within max an hour.

OMS portal Documents:

- Link access to export the document
- Short description of document content
- Last update date

See the section "Where to find information" for the list of all related documents

For Questions: www.slido.com code: #1101 057

General Technical	
Page 1 of 1	
Document Name	Document Description
OMS Conceptual Data Model	The Conceptual Data Model of OMS
OMS Logical Data Model	The Logical Data Model (LDM) implemented in OMS
OMS Logical Data Model for MDM - documentation	Description of the elements in the OMS Logical Data Model
RMS and OMS 2.02.02 release notes	Improvements introduced with the version 2.02.02 release for RMS and OMS
SPOR API sample payloads	Example of the use of API calls available in the OMS/RMS solution
SPOR Integration Patterns	Contains description based on the API Specification on how to combine multiple calls to achieve specific business scenarios
SPOR-API-Specification	Technical specification of the Application Programming Interface (API) which provides access to SPOR services
XSD schema	XSD schema example for the SPOR API

SPOR API key technical documents – see also next section

General	Technical	
Document Name ▲	Document Description ↓	Published Date
A - About OMS	General - Legal disclaimer, copyright and other policies of using Organisation and Location data.	2017-06-26
A1 - OMS Introduction - Webinar 21 October 2021	Webinar - OMS Key principles, services and activities - 21 October 2021	2021-02-04
A2 - Quick Initiation process flow	Guidance - Quick reference guidance for first time users: introduction, access and add/update records	2022-02-03
A3 - OMS FAQs	Guidance - OMS Frequently Asked Questions	2023-02-13
A4 - OMS Introduction - Webinar 10 March 2022	Webinar - OMS services, activities and statistics - 10 March 2022	2022-03-14
A5 - OMS News Items	NEWS - Recent changes implemented, open discussions, future discussions and upcoming functionalities	2023-02-23
A6 - OMS Introduction - Webinar 15 September 2022	Webinar - OMS services, activities and statistics - 15 September 2022	2022-09-20
B - OMS Operating Model	Policy - Range of services available for stakeholders to use and/or request new/updated data, including stakeholder interactions and roles.	2018-05-25
C - OMS Data Quality standards	Guidance - Data quality standards applied in OMS	2023-03-09
C1 - OMS DQ - Webinar 25 September 2018	Webinar - Key principles and rules covered in OMS Data Quality standards - 25 September 2018	2018-11-19
C2 - OMS DQ - Webinar 26 February 2019	Webinar - OMS Data Quality Issues - 26 February 2019	2019-08-16
C3 - OMS Guidance on Assessing Organisation Names and Location Data	Guidance - When minor differences between organisation names and location data are acceptable	2021-02-16
C4 - OMS Mapping Guidance	Guidance - Process for mapping and when to create an OMS change request	2021-06-06
D - OMS Controlled Vocabularies	Guidance - Controlled vocabularies used in OMS	2017-06-12
E - OMS Change Requests	Guidance - Rules and Supporting documentation required by change request type	2023-01-23
F - OMS Web User Manual	Manual - How to search, view, export data and request a new/updated data in OMS web Portal.	2018-04-17
G - Using OMS data in eAF - Webinar 27 June 2018	Webinar - OMS landscape and its use in eAF and in CESP in the future - 27 June 2018	2018-06-27
G1 - Q&A on eAF Mandatory use of OMS	Process - OMS mandatory for CAPs from November 1st onwards - Questions and Answers	2021-10-06
H - Manufacturer organisations in the OMS dictionary	Process - Manufacturer organisation data lifecycle in the context of regulatory activities and who is responsible for registration/updating organisation data about manufacturers in the OMS.	2018-12-18
I - Impacts of OMS merge on EMA systems	Guidance - Validation of OMS consuming system data after the merge takes place in OMS	2021-04-28
J - CT registration Headed letter template	Template - For requesting the creation of sponsors and/or clinical trial sites	2023-01-23
U - About SPOR	General - Legal disclaimer, copyright and other policies of using SPOR data.	2017-06-26
V - SPOR Questions & Answers	General - Compiled questions on a variety of topics, including user registration, Industry on-boarding, and eAF integration.	2018-02-12
V1 - RDM Customer Satisfaction Survey 2021	SPOR Customer Satisfaction Survey November 2021	2022-01-31
V2 - RDM Customer Satisfaction Survey 2022	SPOR Customer Satisfaction Survey October 2022	2023-02-13
X - SPOR SLAs	General - Service Level Agreement (SLAs) for the SPOR data services.	2021-02-17
Z - SPOR User Registration Manual	Manual - How to register for EMA systems and request SPOR user roles.	2023-02-14
Z1 - SPOR User Registration - SPOR 5 October 2017	Webinar - How to register for EMA systems and request SPOR user roles - 5 October 2017	2020-07-15
Z2 - SPOR Super User Affiliation Template Letter	Template - For requesting the organisation's first SPOR Super User role.	2020-09-20
Z3 - SPOR API Access - Q&A	Process - How to request access to SPOR API - Questions and Answers	2017-12-06
Z4 - SPOR API Access - Webinar 10 November 2021	SPOR API Access - Webinar 10 November 2021	2021-11-11
Z5 - EMA - API General Terms of Service - Terms of Use	EMA - API General Terms of Service - Terms of Use	2021-06-29
Z6 - SPOR API Access Request Form	SPOR API Access Request Form	2021-11-08
Z7 - SPOR API Access and Registration - Webinar 18 March 2023	Webinar - API registration process and OMS/EMA API management and tips	2022-04-04

API access



API resources and concepts



Key documents:

 Item	 Purpose
SPOR API specification	This formal specification describes all of the general principals and a comprehensive list of all available endpoints for RMS and OMS (e.g. SPOR API v1). It is the recommended entry point for any developer (https://spor.ema.europa.eu/v1/documents/c75e7047-8f02-4ce6-b81e-c5380e825a27?app-domain=OMS&doc-type=TECHNICAL)
SPOR API XSD Schema	This document formally describes the data format that all different payloads must conform to, both as input and as output of the endpoint calls. This is also part of the recommended entry point for any developer (https://spor.ema.europa.eu/v1/documents/c75e7047-8f02-4ce6-b81e-c5380e825a27?app-domain=OMS&doc-type=TECHNICAL)
SPOR Integration patterns	This contains a description based on the API specification on how to combine multiple calls to achieve specific business scenarios (https://spor.ema.europa.eu/v1/documents/b344ba89-6d6b-415a-aa71-c437760be808?app-domain=OMS&doc-type=TECHNICAL)
SPOR API sample payloads	This is a particular instantiation from the above, that is, it contains specific examples for most of the API endpoints. It is however not meant to be a full catalogue or a formal representation of the data (https://spor.ema.europa.eu/v1/documents/c75e7047-8f02-4ce6-b81e-c5380e825a27?app-domain=OMS&doc-type=TECHNICAL)

General API Concepts:

 Item	 Definition
 Authentication/Authorisation	• Basic authentication over HTTPS is the only supported mode currently. Other options such as Oauth may be inspected in the future • RBAC authorization with provisioning via the EMA Account management portal
 Versioning	• All service calls include the version in the URI (/v1/xyz for RMS & OMS and soon v2/xyz for SMS & PMS). V1 and v2 are not compatible and we plan to maintain v1 for the foreseeable future • The XSD schema is versioned independently from the service with the format majorV.minorV
 Resources, verbs, representation	• A resource is anything that can be identified and manipulated with a set of verbs (lists, terms, organisations, documents, etc.). Described in the API specification and, more formally, in the XSD schema. Always UTF-8 encoded. • The resources can be represented in XML or JSON. Additionally, ZIP may be used for file downloads. • Verbs represent the actions can be applied on the SPOR resources; implemented as HTTP methods (see below)
 HTTP	• POST, PUT, GET, DELETE methods are used to create, update, retrieve and delete resources • HTTP status codes are used to signal success (2xx) or failure (4xx, 5xx). The range of 4xx codes is used to represent multiple possible outcomes of the service call

SPOR API Concepts:

 Concept/Query/issue	 Definition/Answer/resolution
SSL certificates (in testing environments)	Certificates exposed in test environments are typically signed by the internal EMA CA. This may change in the future, but at the moment it is necessary to either ignore the client-side security warning or to import the root and intermediate certificates in the local trust-store
Unaffiliated users	A user is unaffiliated if it is not yet linked to an organisation. Unaffiliated users cannot use the SPOR API
Pagination	In order to iterate through the pages of a resultset, it is mandatory to use page, pagesize and searchtoken. Please inspect the next-page, previous-page elements of the responses to better understand its usage Note: The maximum results on a page is 1000 (attribute pagesize)
Bad Requests	The POST payload for some of the actions is not always easy to compose. Referring the payload examples document or to the network capture of the Web UI may help to get the payload right
Query parameter Validation	At the moment, incorrect query parameters are simply ignored by the system. Although this is a valid implementation, we have detected that it may be challenging for implementers in terms of finding typos in their calls. In future releases, this shall be addressed and a comprehensive query parameter validation shall be offered



Tools for exploring and understanding the API:

 Item	 Purpose	 Location
Postman	A GUI to easily debug HTTP calls, header and payload composition/inspection. It is recommended to use the stand-alone version rather than browser-attached app	https://www.getpostman.com/
SoapUI	Comprehensive web service testing framework. Typically used similarly to Postman but, in addition, usually the base for automated testing	https://www.soapui.org/
SPOR Web UI	The SPOR Web UI is fully based on the SPOR API v1 to provide its functionality. That makes it a good tool to analyse endpoint usage and payload composition and interpretation. However in no way it is a replacement for the API formal specification	https://spor.ema.europa.eu/sporwi/
Code Beautify	JSON and XML (among others) formatter, very useful to capture network traces and analyse them	https://codebeautify.org/
Richardson Maturity Model	A model (developed by Leonard Richardson) that breaks down the principal elements of a REST approach into three steps. These introduce resources, http verbs, and hypermedia controls	Various Internet resources



Resources accessible via the SPOR V1 API:

RMS

- ☐ List
- ☐ Term
- ☐ Translation
- ☐ Change Request
- ☐ Document
- ☐ Search Query
- ☐ Subscription
- ☐ Tag
- ☐ Preferred Name

OMS

- ☐ Organisation
- ☐ Location
- ☐ Change Request
- ☐ Document



API demo and tips



This section covers:

- ✓ Demos on usage of the SPOR API to **access OMS resources**
- ✓ Explanation of the **merge process**
- ✓ Demos on usage of the SPOR API to **access RMS resources**

DEMO



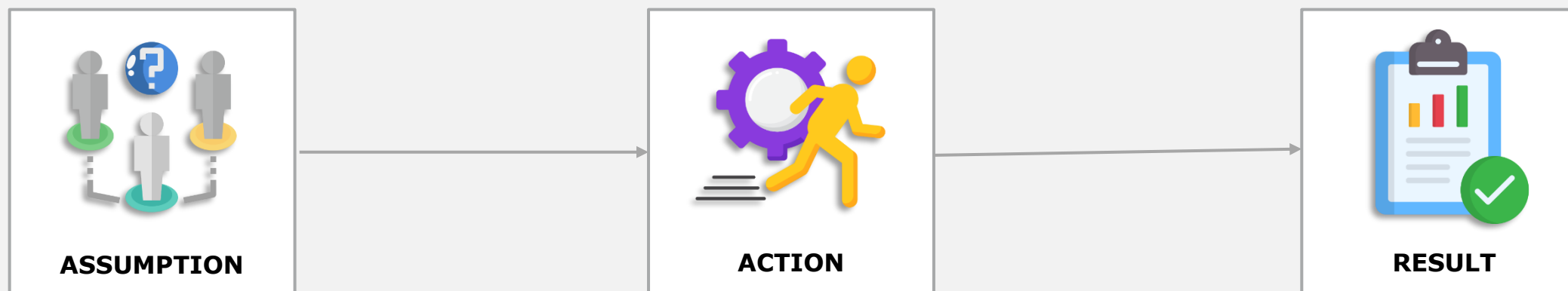
DEMO

- Full list of organisations and locations
- Searching for organisations and locations
- Obtaining organisation and location details



TIPS

- Even if an user has correct SPOR roles, HTTP-401 will be returned as far as the API role is not granted
- Maximum number of organisations or locations that can be returned is 200 on a single page (default is 20) – controlled by pagesize (e.g. /v1/organisations?ORG-10000391*&pagesize=5)
- If **all** organisations are to be retrieved then parameter pagesize=0 can be used (e.g. spor.ema.europa.eu/v1/organisations?pagesize=0), but pagesize=0 cannot be provided in conjunction with any other query parameters except versions=true or versions=false.
- Currently the history of organisations does work properly (e.g. versions=true)
- Some attributes (e.g. address) can be found in multiple languages
- If a LocID starts with ORQ- instead of LOC-, do not consider -> it means the location is still Provisional



- An Organisation ID or Location ID published by the OMS will be **retained for the lifetime of the system** and will **always** point to a **single data record**
- Organisation A and organisation B are merged in OMS
- This could be due to a business merge/acquisition of companies or to clean duplicated records
- Only **one** of the organisation identifier survives as **golden record** – the one with the lowest OrgID; others will still be **linked to the golden record**, they **will not be Inactivated nor deleted**
- If we consider Org A with the lowest OrgID and **golden record**, it means when searching for Org B, this OrgID still works and points to Org A
- To ensure stability of possible references from external systems, every action referring a non-surviving merged record will keep on working and returning data that belongs to the golden record
- NOTE: the above applies to Locations too



← → ↻ spor-uat.ema.europa.eu/v1/organisations/ORG-100119491

Apps Space: Informatica... JSIS online Login - Oracle Ente... SOLR IDD SPOR IDQ SPOR Website Citrix

This XML file does not appear to have any style information associated with it. The document tree is shown below.

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<organisation xmlns="http://ema.europa.eu/schema/spor" schema-version="2.0" query-timestamp="2021-11-10T09:34:03.734"
  <operational-attributes created-on="2021-11-09T16:14:58.195Z" modified-on="2021-11-09T16:45:19.474Z"/>
  <organisation-id id="ORG-100119491">
    <link rel="self" href="https://spor-uat.ema.europa.eu/v1/organisations/ORG-100119491"/>
  </organisation-id>
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  <identifiers>
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      <code>ORQ-110000643</code>
    </identifier>
    <identifier code-system="100000167446" code-system-name="OMS Organisation Identifier">
      <code>ORG-100119491</code>
    </identifier>
    <identifier code-system="100000167446" code-system-name="OMS Organisation Identifier">
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      <code>ORQ-110000644</code>
    </identifier>
  </identifiers>
  <mappings/>
```

← → ↻ spor-uat.ema.europa.eu/v1/organisations/ORG-100119492

Apps Space: Informatica... JSIS online Login - Oracle Ente... SOLR IDD SPOR IDQ SPOR Website Citrix

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
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  <operational-attributes created-on="2021-11-09T16:14:58.195Z" modified-on="2021-11-09T16:45:19.474Z"/>
  <organisation-id id="ORG-100119491">
    <link rel="self" href="https://spor-uat.ema.europa.eu/v1/organisations/ORG-100119491"/>
  </organisation-id>
  <active-request>false</active-request>
  <identifiers>
    <identifier code-system="100000167474" code-system-name="OMS Request Identifier">
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    </identifier>
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    </identifier>
    <identifier code-system="100000167474" code-system-name="OMS Request Identifier">
      <code>ORQ-110000644</code>
    </identifier>
  </identifiers>
  <mappings/>
```



Handling merged organisations – to be implemented locally

After a GET v1/organisations?org-modified-after={modifiedDate:dateTime} – to synchronize with OMS, for each organisation id (identifier.code) in an organisation's identifiers perform an API request GET v1/organisations/{orgId:string}.

- If the organisation id is equal to the main organisation id in the response, then this is the surviving organisation of a merge
- Otherwise the organisation id is that of a non-survivor which was merged into the organisation id in the response

Pseudo code:

- GET v1/organisations?org-modified-after={modifiedDate:dateTime}
- FOR EACH identifier.code IN organisation.identifiers GET v1/organisations/{orgId:string}
- IF orgId == organisation.organisation-id#id THEN ORGANISATION IS SURVIVER
- ELSE ORGANISATION IS MERGED INTO organisation.organisation-id#id
- END FOR EACH



Handling merged locations – to be implemented locally

After a GET v1/locations?loc-modified-after={modifiedDate:dateTime} – to synchronize with OMS, for each location id (identifier.code) in a location identifiers perform an API request GET v1/locations/{locId:string}.

- If the location id is equal to the main location id in the response, then this is the surviving location of a merge
- Otherwise, the location id is that of a non-survivor which was merged into the location id in the response

Pseudo code:

- GET v1/locations?loc-modified-after={modifiedDate:dateTime}
- FOR EACH identifier.code IN location.identifiers GET v1/locations/{locId:string}
- IF locId == location.location-id#id THEN LOCATION IS SURVIVER
- ELSE LOCATION IS MERGED INTO location.location-id#id
- END FOR EACH



- Organisations/Locations have been onboarded from different source systems into OMS and may have been merged in the process
- When Organisations/Locations have been merged this means that in **one record** there could be **different mapped IDs** e.g. if Organisation A and Organisation B have been merged, and Org A identifier was kept as golden record, it means when searching for Org B, this OrgID still works and points to Org A

- Organisation A and organisation B are unmerged in OMS
- This is only used to resolve a previously incorrect merge – we do not use this when companies acquire others business units
- **Two** separate organisations exist as **golden record**, Organisation A and Organisation B – the original IDs will be split across records, original IDs will be returned to original organisations

- When searching for Org B, this OrgID only points to Org B (and no longer points to also Org A) - **Org B appears similar to a new Organisation**
- NOTE: the above applies to Locations too



DEMO



DEMO

- Exporting and browsing lists
- Obtaining list and term details
- Searching for terms



TIPS

- Even if a user has correct SPOR roles, HTTP-401 will be returned as far as the API role is not granted
- Maximum number of terms that can be returned is 1000 on a single page (default is 20)
- Update of terms is **not** supported; In order to suggest update to a term submit an update term Change Request



SPOR API News



2022 & 2023: Focus on reliability and throughput

Context:

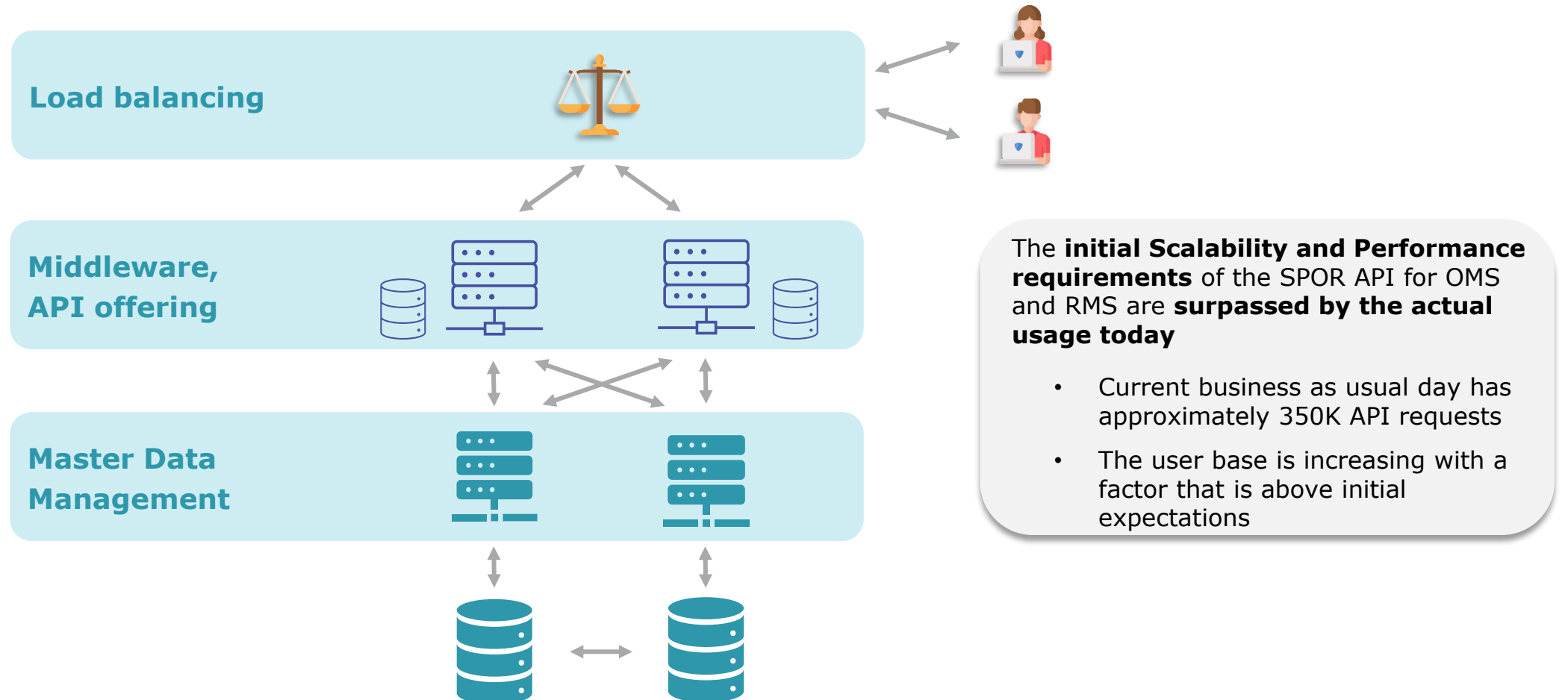
The initial Scalability and Performance requirements of the SPOR API for OMS and RMS are surpassed by the actual usage today

- Current business as usual day has approximately 300K API requests
- The user base is increasing with a factor that is above initial expectations

Latest SPOR API news:

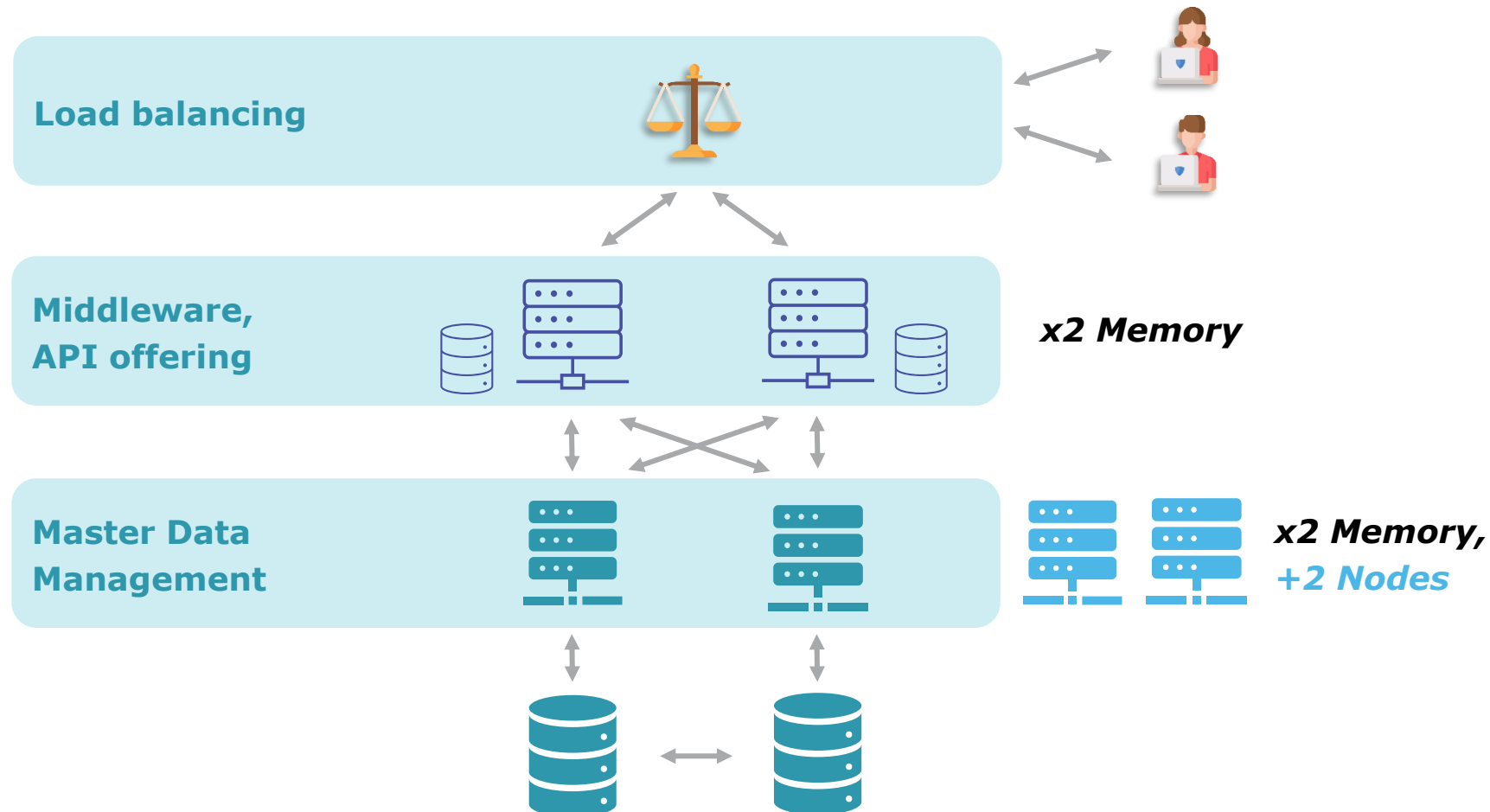
- **Last improvements** carried out at SPOR
- **Rearchitecting SPOR** for future proofing
- **First roll out:** API rate limiting
 - What changes
 - Experience
 - How to prepare

During **2022** we scaled the service vertically and horizontally, maxing out the architecture

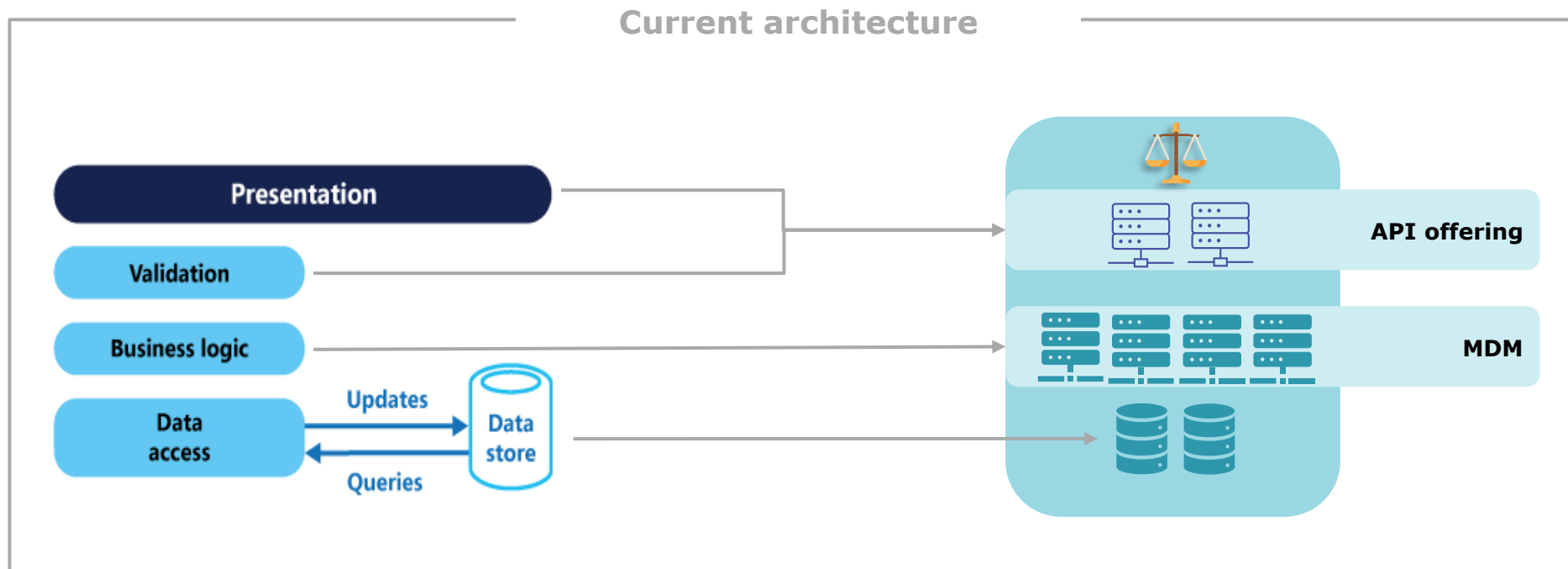


During **2022** we scaled the service vertically and horizontally, maxing out the architecture

The change has helped to cope with the increase of consumers and the viability of the service offering

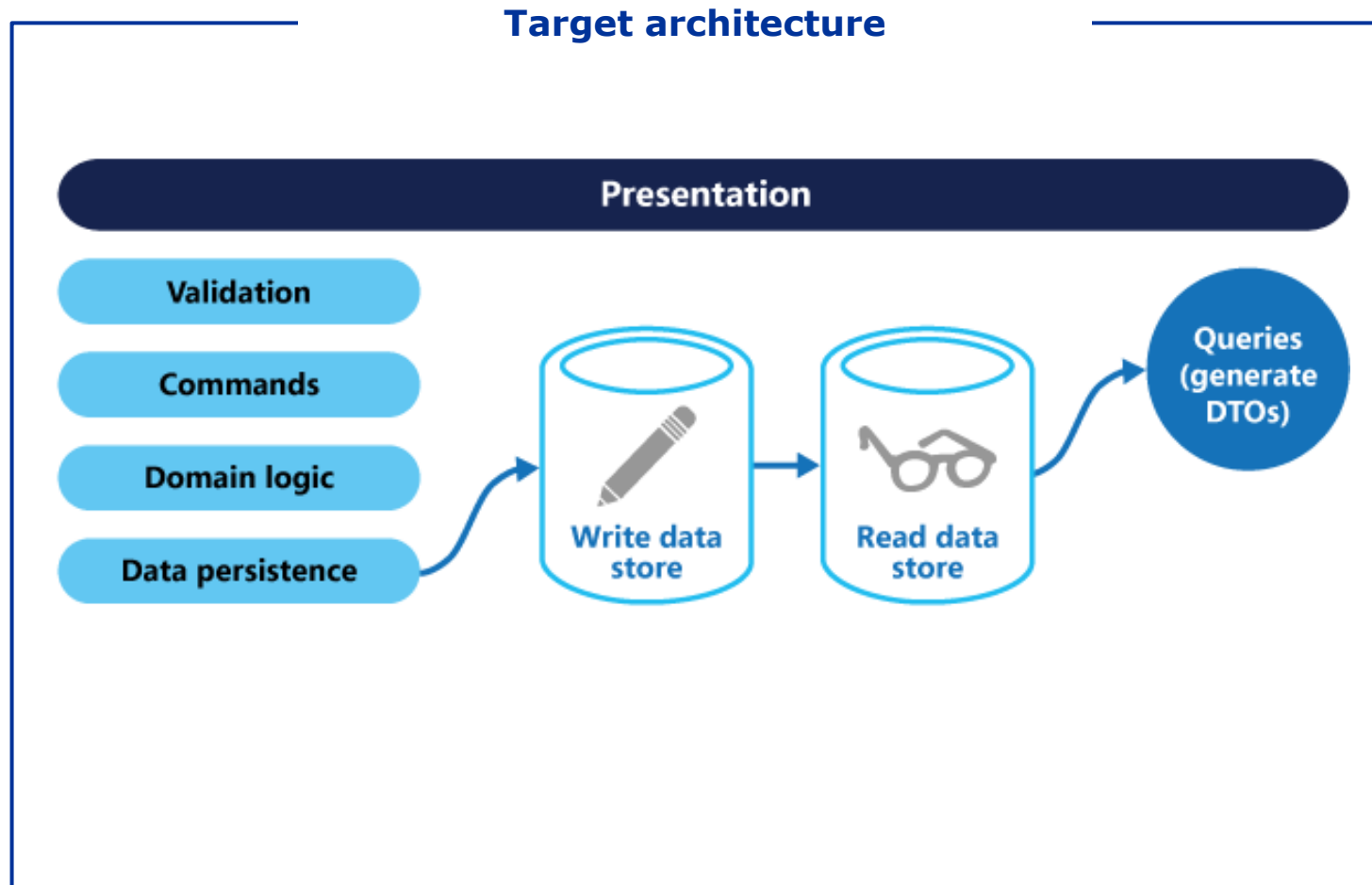


During **2023 we are evolving the SPOR API architecture** to be able to handle current and future Scalability and Performance requirements



- Monolithic integration
- Resources shared for API offering and Data Mastering

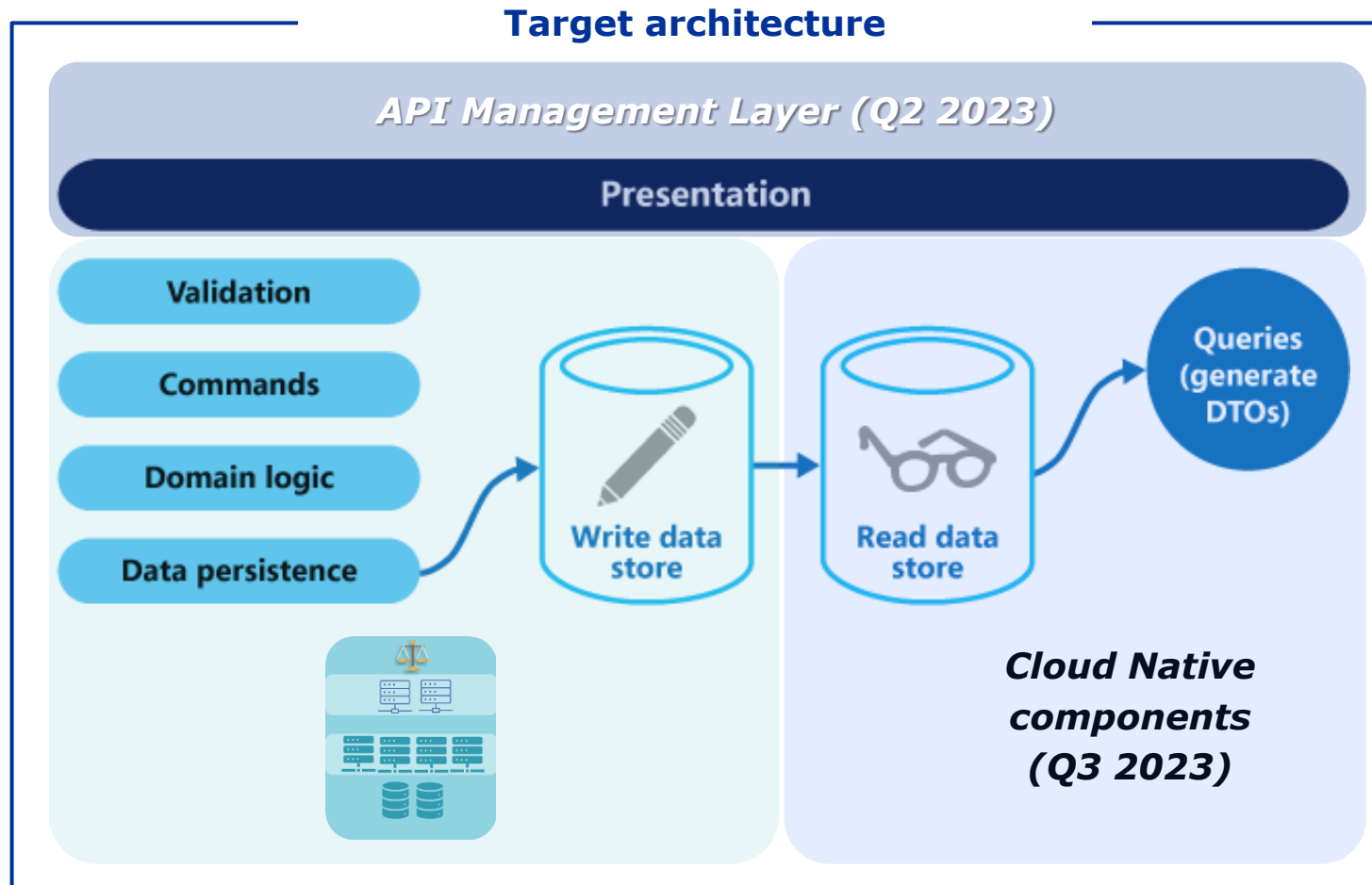
During **2023 we are evolving the SPOR API architecture** to be able to handle current and future Scalability and Performance requirements



The target splits the Master Data process and the API offering

- The API will be served from highly available and scalable resources, implemented with the focus on data availability
- The Master Data process increases the throughput and reliability after decoupling from the variable loads of the consumers

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SPOR API V1 Rate Limiting – What changes?

The current architecture can manage usual usage, however it is vulnerable to **peaks** in usage.

To protect the SPOR API from peaks in usage we aim to introduce an API request **Rate Limiting** mechanism that spreads use/API requests/queries over longer periods

Description:

- Implemented in OMS Search and OMS GET by ORG ID and LOC ID endpoints
- **General** limit to maximum **1000 requests per minute**
- **Per user** limit to maximum **60 requests per minute**
- The timeframe is rolling, the limit applies to the last window of 60 seconds
- At the moment OMS Change requests and RMS APIs are **unaffected**. This feature will be extended to these APIs in the future and further information will be shared ahead of time. Please stay tuned!

SPOR API V1 Rate Limiting – Experience

1. You get informed -> HTTP Status 429 Too Many Requests

- API users and integration code should expect and manage the HTTP Status 429 Too Many requests returned when the quota of requests per minute has been reached

2. You should retry -> Retry-After (seconds)

- The HTTP Header Retry-After informs how many seconds the API user needs to wait before their following request will be allowed

3. The response body can be ignored



Body	Cookies	Headers (6)	Test Results	429 Too Many Requests	252 ms	316 B	Save Response
KEY	VALUE						
Date	Wed, 01 Mar 2023 09:25:32 GMT						
Content-Type	application/json						
Content-Length	84						
Connection	keep-alive						
Retry-After	51						
Request-Context	appid=cid-v1:8b30b212-893c-43b4-9113-d6daeb703eb9						



How does it impact your processing:

1. Your requests are always responded
2. You will notice it only if you go over the maximum rate



SPOR API V1 Rate Limiting – How to prepare

Next steps for you i.e how can you prepare/deal with this:

- Adapt the integration with SPOR V1 API to be able to handle the new HTTP Status and HTTP Header Retry-After
- The feature will be available on the SPOR UAT environment by the end of next week
- If you do not adapt, the effects depend on your implementation of the integration with the API

Where /how to get support with queries

- For support please open a EMA Service Desk question mentioning the SPOR Rate Limiting mechanism in the title



Planned Features and Improvements

Q2 2023

Performance and stability improvements on OMS

- Rate limiting and other optimisations

Q4 2023

Rollout of SPOR v2

- SMS API: EMA, NCA and industry access
- PMS API: Initial access of PMS API to EMA and NCAs only

Q4 2024

Upgrade of the MDM engine

- Currently gathering requirements for an holistic upgrade of all our Master Data backend process implementations
- Functionally future-proofing the SPOR service
- The API decoupling of v1.1, v1.2 and v2 will make this change transparent for consumers



Q3 2023

SPOR v1.1: extending OMS v1

- New architecture, core-compatible with v1
- Base for 1.x extensions
- Currently under design and early implementation stages
- Available for all the current user base

Q1 2024

SPOR v1.2: extending RMS v1

- Following the OMS rearchitecting
- Currently under analysis
- Targeting all the current RMS user base



Key takeaways and conclusions



Introduction to and update on the SPOR API v1

- Clarified what is and what is not an API; User and technicalities
- Clarified SPOR API V1 vs V2 and how to Request access to SPOR API V1



Provide concrete examples of how to use the API

- Recap SPOR API resources and concepts
- Provided a SPOR API demo and tips, particularly addressing OMS merge/unmerge process



Guide API users to relevant documentation and support

- SPOR help & support available through EMA Service Desk
- System Monitoring in place
- SPOR Portal contains key documents about API resources and concepts



SPOR API news & Planned Features and Improvements

- Clarified focus for 2023 on rearchitecting SPOR for future proofing
- Shared last improvements carried out and planned roll out of API rate limiting
- Shared other planned improvements: Version 2 of OMS and OMS API; SMS and PMS APIs and the Upgrade MDM



Any questions on the webinar?



SPOR week is a **full week of webinars** during which EMA's Regulatory Data Management Service team talks about all aspects of regulatory data management and how it works today

 Webinar title	 Date	 Time
<u>SPOR and XEVMPD Data Governance</u>	17 April 2023	10:00-12:00 CET
<u>Service Desk for SPOR and XEVMPD</u>	17 April 2023	14:00-16:00 CET
<u>Referentials Management Service (RMS)</u>	18 April 2023	10:00-12:00 CET
<u>Organisation Management Service (OMS)</u>	18 April 2023	14:00-16:00 CET
<u>Substance Management Service (SMS)</u>	19 April 2023	10:00-12:00 CET
<u>Product Management Service (XEVMPD)</u>	19 April 2023	14:00-16:00 CET
➤ <u>Substance, product, organisation and referential (SPOR) application programming interface (API) - SPOR API</u>	20 April 2023	10:00-12:00 CET
<u>EMA Account Management</u>	20 April 2023	14:00-16:00 CET



Further information

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