Interoperability Test Bed webinar

Using the Test Bed for validation and conformance testing

June 9th 2021
09:30 - 11:00 CET

Webinar practicalities

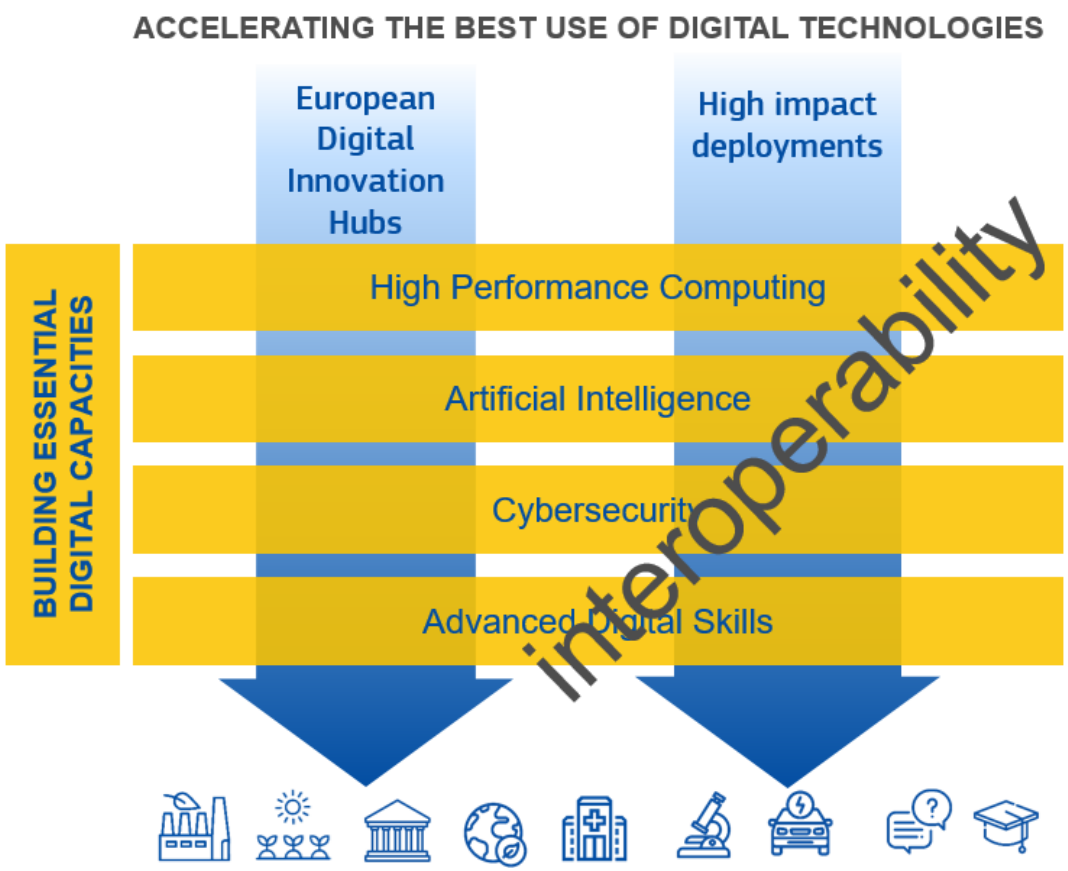
Connect your audio but please mute your microphones

We have breaks for questions but feel free to also use the chat

Please be aware that the webinar will be recorded

1	**Introduction**
2	Content validation
3	OSLO case study
4	DCAT-AP.de case study
5	Q & A session
6	Conformance testing
7	Q & A session

ISA² to DEP – The Digital Europe Programme



CEF Digital Connecting Europe | ISA² — Common Services Platform
CEF BBs + selected ISA² solutions

eDelivery, eID, eSignature, eTranslation
CoreVocs, EIRA, EU-Survey,...

NEW — European digital identity solutions

CEF Digital Connecting Europe — Once Only Principles

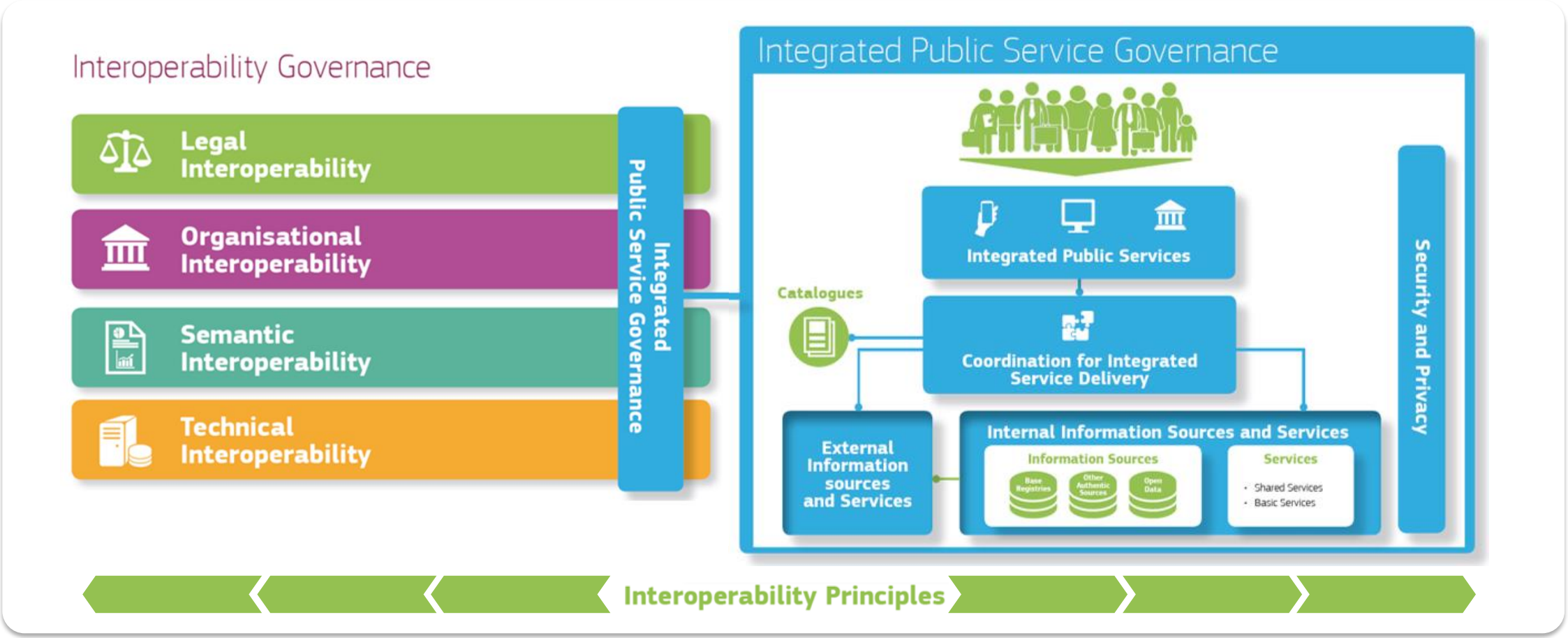
ISA² — Interoperability Knowledge and Support Center

EIF, EIF Toolbox, Innovative Public Services, Interoperability Academy, Legal and Organisational Interoperability, Open source, SEMIC, pilots

NEW — GovTech Incubator

From ISA² — Trans European Services for Telematics between Administrations

Interoperability for EU public services – The EIF



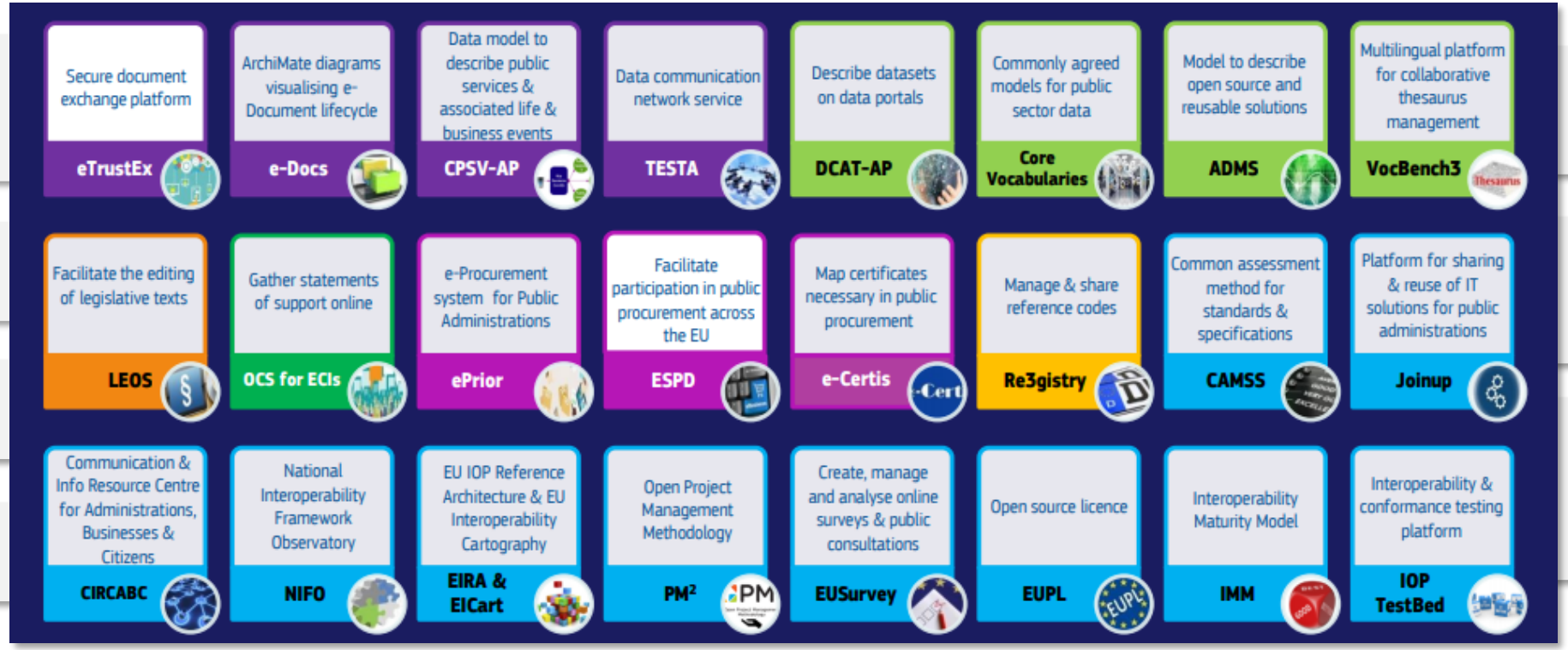
ISA² Programme solutions

Key & generic interoperability enablers

Semantic interoperability

Geospatial solutions

eProcurement & eInvoicing



Decision making & legislation

EU policies - Supporting instruments

Supporting instruments for public administrations

What is the Test Bed?

ITB
Interoperability Test Bed

The Interoperability Test Bed is an online, intuitive and self-service platform for conformance testing of IT systems against semantic and technical specifications

Powered by DIGIT

Standards-based (GITB CWA)

What can it be used for?

Conformance testing

- ✓ Test specification conformance
- ✓ Validate data and quality control
- ✓ Simulate APIs
- ✓ Verify message exchanges
- ✓ Self-service usage
- ✓ Rich reporting of test results
- ✓ Progress overview and monitoring
- ✓ Conformance certificates

Interoperability testing

Key services

Content validators

- ✓ Used for ***data validation***
- ✓ Anonymous and stateless
- ✓ Multiple input channels
- ✓ Various reporting outputs
- ✓ Configuration driven

Complete Test Bed

- ✓ Used for ***conformance testing***
- ✓ Scenario-based test cases
- ✓ Account-based
- ✓ Rich monitoring and reporting
- ✓ Extensible capabilities

Flexible usage models

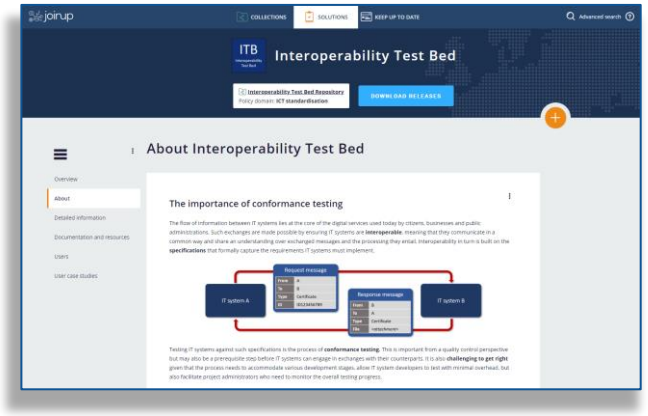
Use as a DIGIT service

- ✓ Use as ***services***
- ✓ Shared cloud-based instances
- ✓ Distinct setup per project
- ✓ User-managed configuration
- ✓ Operated by DIGIT

Install on-premise

- ✓ Use as ***components***
- ✓ Public Docker images
- ✓ Hosted and operated by users
- ✓ Allows access restrictions
- ✓ Allows internal integrations

Rich documentation

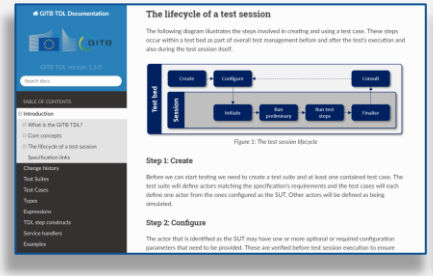


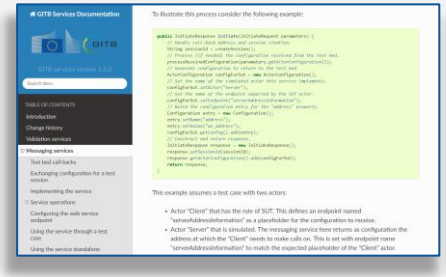
Test Bed **documentation hub** in Joinup

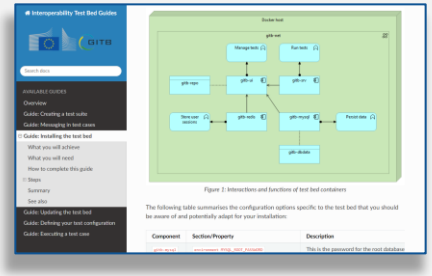
- ✓ Introduction and details
- ✓ Releases and news
- ✓ User stories

Extensive guides

- ✓ User and developer guides
- ✓ Documentation and tutorials







ISA²

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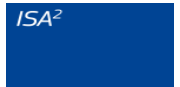


Validator use cases

	Community tool	Quality control	Production validation
WHAT	Provide a validation service to **support specifications** in testing of conformance	Automate quality control and monitoring for internal **data ingestion** processes	Support **production services** by validating generated and received data
HOW	✓ Machine-processable rules ✓ Managed by spec owners ✓ Public validator	✓ Automated validation ✓ Flexible configurations ✓ Internal validator(s)	✓ API integration ✓ Scalable deployments ✓ High-availability setup

Syntax support

ITB RDF validator

- ✓ Validation of **RDF** data
- ✓ Based on SHACL shapes

ITB CSV validator

- ✓ Validation of **CSV** data
- ✓ Based on Table Schema

ITB XML validator

- ✓ Validation of **XML** data
- ✓ Based on XSDs, Schematron

ITB JSON validator

- ✓ Validation of **JSON** data
- ✓ Based on JSON Schema

- ✓ Available as DIGIT services

  See RDF, XML, CSV, JSON guides

- ✓ Shared as public Docker images

  See RDF, XML, CSV, JSON Docker Hub entries

Validator configuration

Validation artefacts

Rules expressed as validation artefacts depending on syntax

Configuration properties

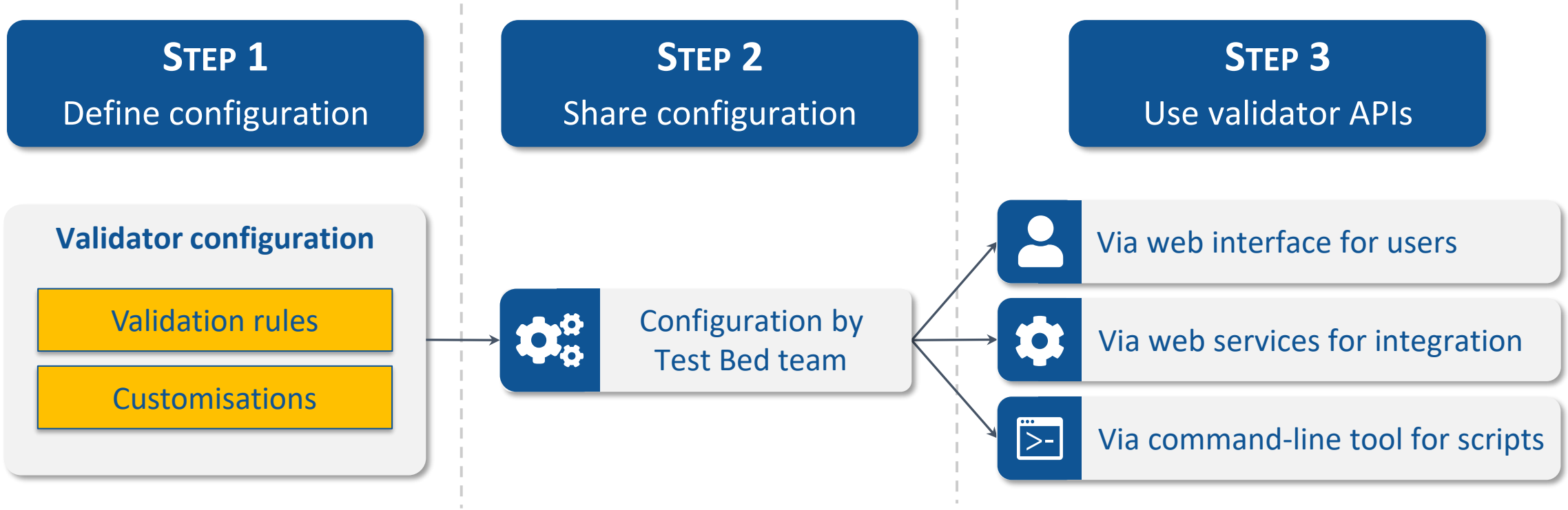
Customisation of behaviour and available validation options

```
validator.channels = form,soap
validator.type = v1,v2
validator.typeLabel.v1 = Version 1
validator.typeLabel.v2 = Version 2
validator.schemaFile.v1 = ...
```

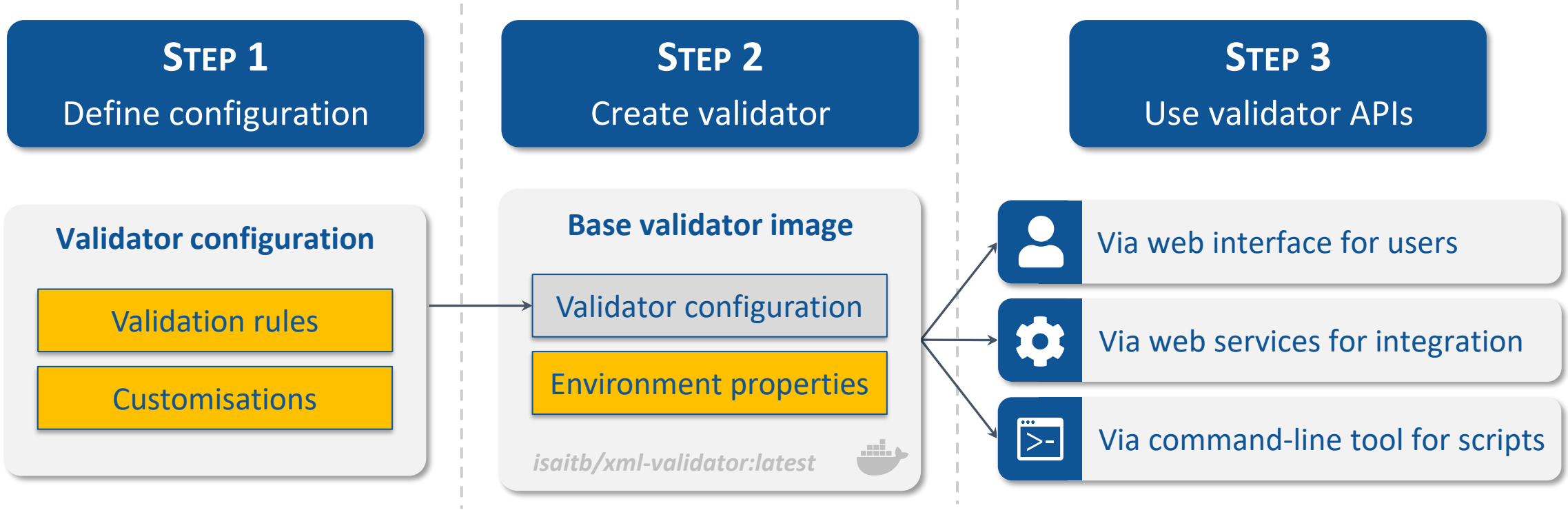
Validator demo

Validation of an electronic invoice
using the eInvoicing validator

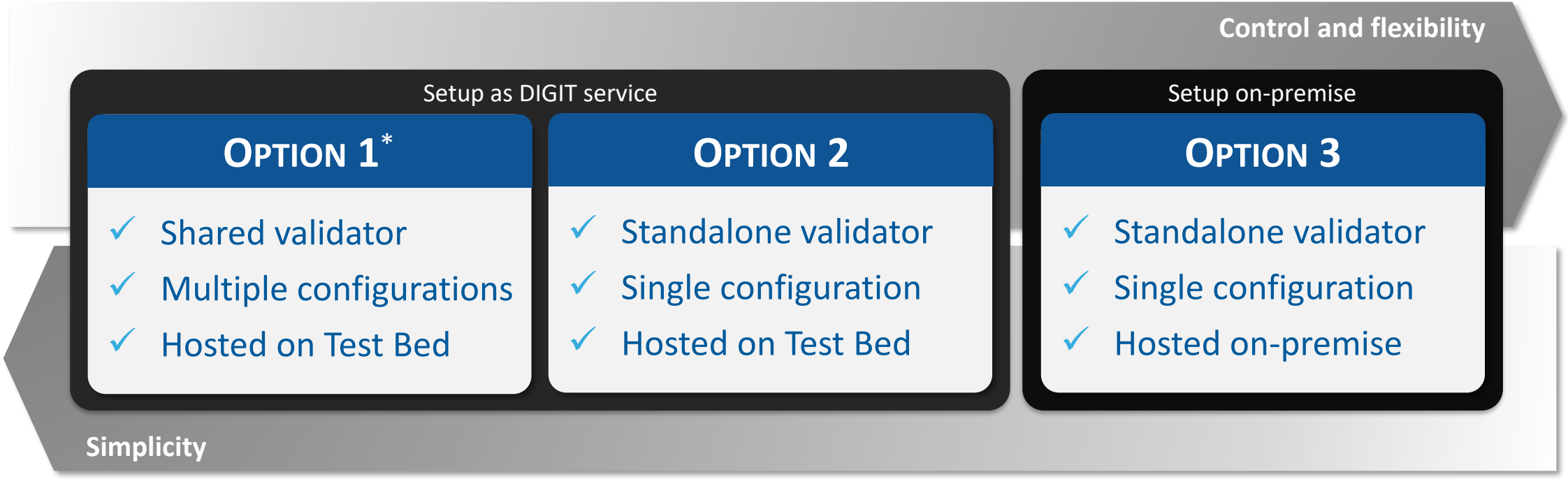
Setup approach 1: as DIGIT service



Setup approach 2: on-premise



Operation options



* *Applicable in scenarios where multiple parties extend a common specification (e.g. an EU specification with National extensions)*

Validator demo

Example validators per operation option
(Catalogue of Services, DCAT-AP.de, OSLO)

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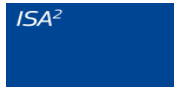

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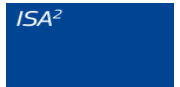

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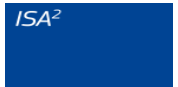

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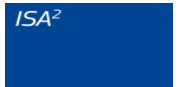


Test Bed use cases

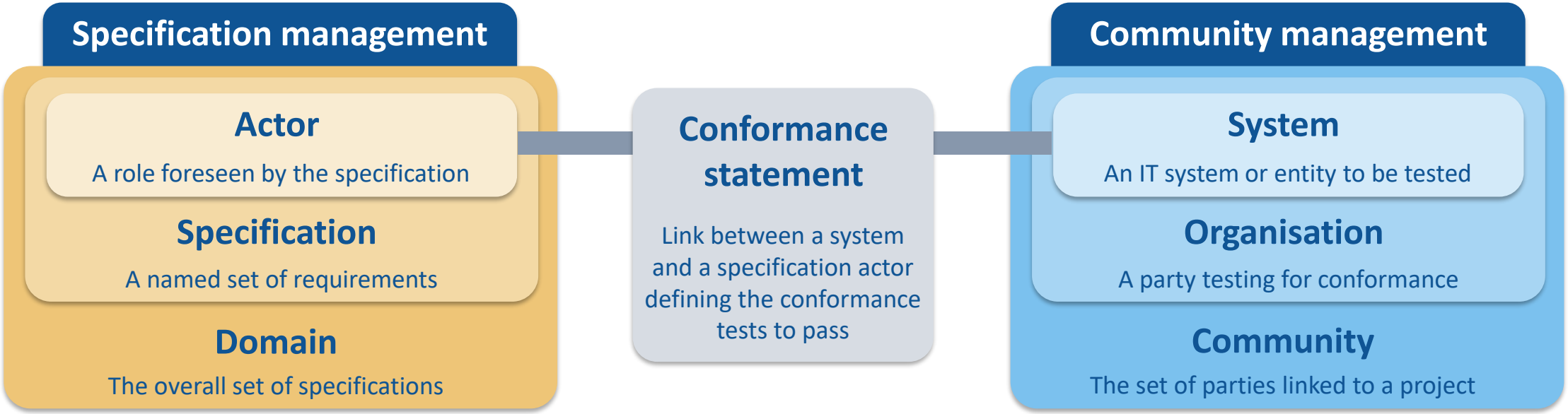
	Community support	Peer certification	Grant application
WHAT	Support a specification via **demonstration scenarios** and test cases as **utilities**	**Certify peer IT systems** for a specification's release before joining production exchanges	Verify **grant applications** through a process requiring demonstration of capabilities
HOW	✓ Executable examples ✓ In-context documentation ✓ Public community	✓ Extensive test scenarios ✓ Specification versioning ✓ Private community	✓ Data collection ✓ Conformance certificates ✓ Public self-registration

Validation vs conformance testing

	Validators	Test Bed
Focus	Data validation	Business process, message exchange and data validation
Context	Anonymous usage with no context	Testing by identified users in scenarios with specific inputs and expected results
Output	Validation report without recorded results	Recording of results and monitoring to facilitate conformance reporting

Validators are used as **conformance testing building blocks** (e.g. validate exchanged data)

Test Bed concepts



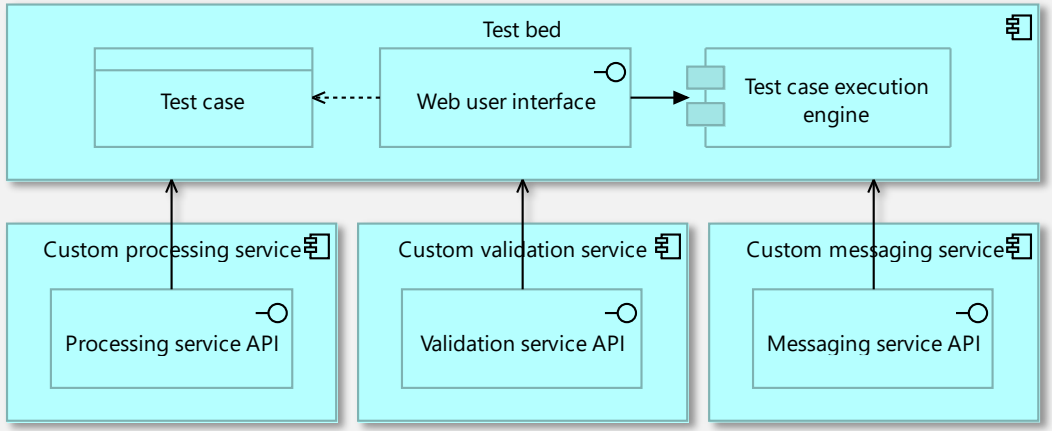
Specification and community concepts are managed, defined and labelled per project

Technical capabilities

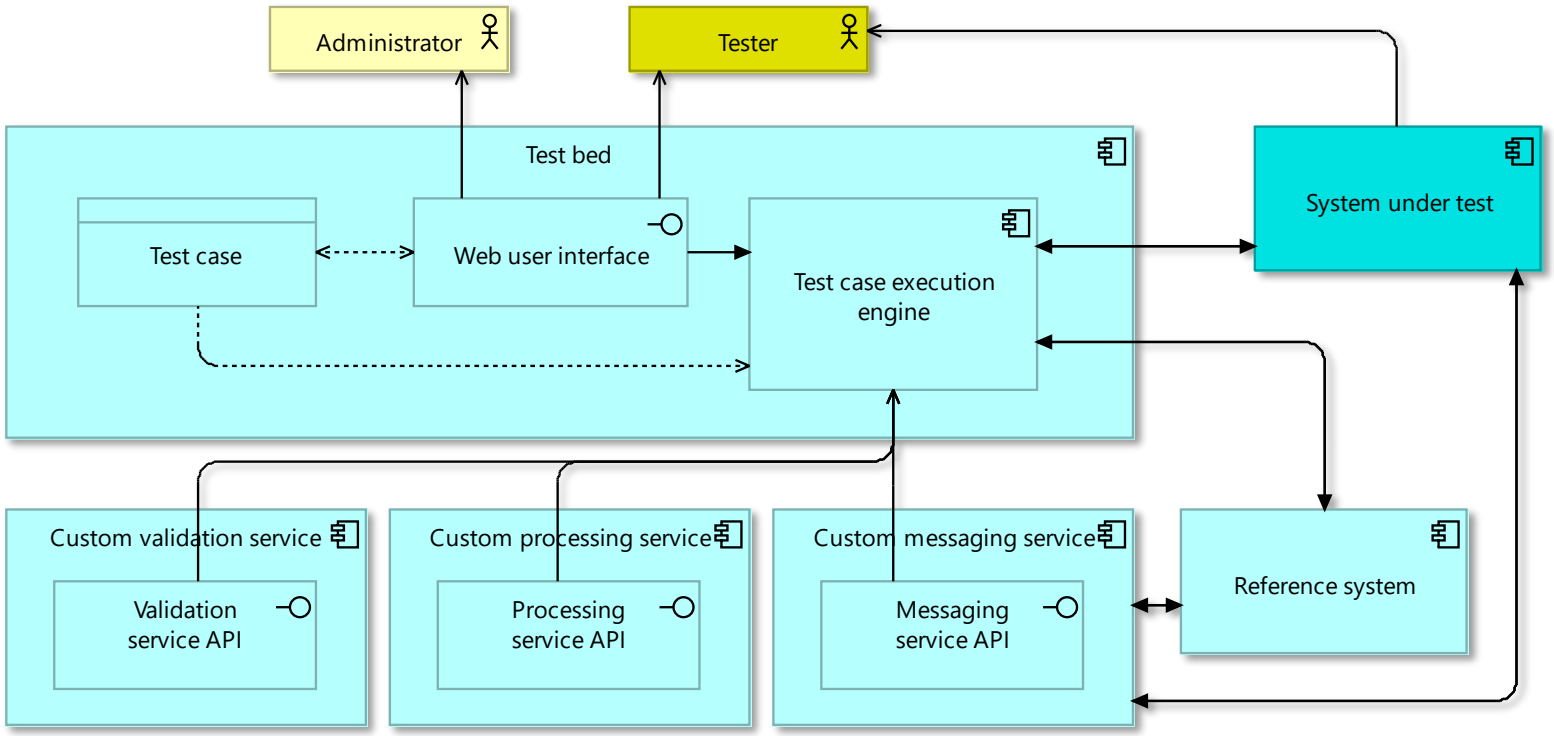
Built-in support

Validation	XSD	Schematron	XPath	RegExp	GraphQL	
	SHACL	JSON Schema	Table Schema	ASiC	...	
Messaging	HTTP	HTTPS	AS2	AS4	TCP	UDP
	REST	SOAP	eDelivery	UN/FLUX	...	
Processing	ASiC	ZIP	SBD	Timestamps	Digests	
	Signatures	Templates	Webhooks	Tokens	...	

Custom extensions



Architecture



Administrator

- ✓ Configure tests
- ✓ Manage users
- ✓ Monitor progress

Tester

- ✓ Execute tests
- ✓ Manage organisation
- ✓ Review results

Test Bed demo

Test execution, reporting and monitoring
for testers and administrators

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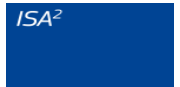

Find out more

ISA² Test Bed on Joinup

Information - news - releases

Online documentation

Value proposition - tutorials - developer guides

Try it yourself

Go to https://www.itb.ec.europa.eu/itb and click “Try out our demos”

Contact us

Send your questions and feedback to DIGIT-ITB@ec.europa.eu

ISA² programme

You click, we link.

Stay in touch

ec.europa.eu/isa2 @EU_isa2 isa2@ec.europa.eu

Run by the Interoperability Unit at DIGIT (European Commission) with 131€M budget, the ISA² programme provides public administrations, businesses and citizens with specifications and standards, software and services to reduce administrative burdens.