

# EU-SEC

# Multiparty Recognition Framework

Training & Awareness Slide Set

# Introduction to EU-SEC





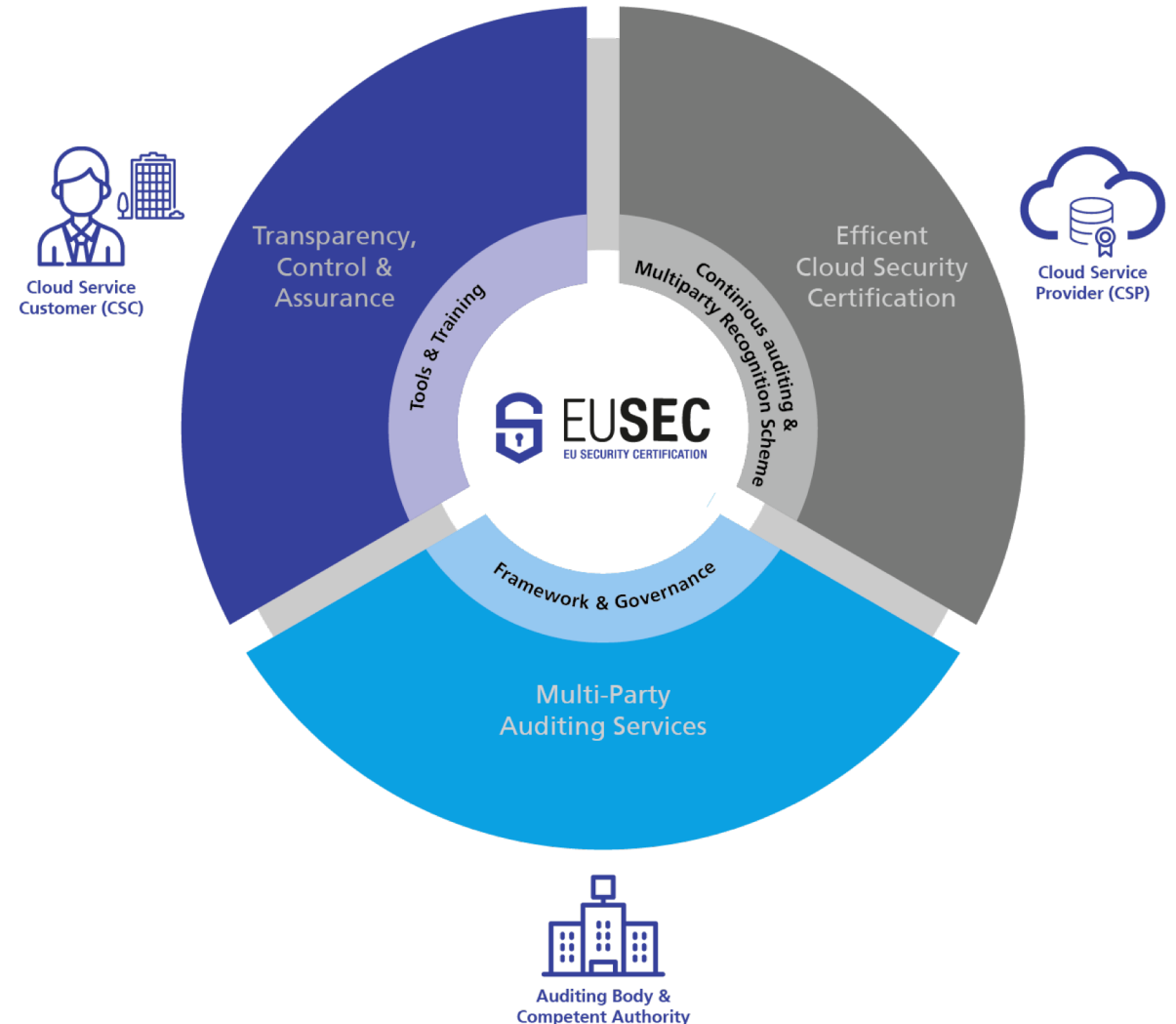
# Trust in Cloud by Certification

## The European Security Certification Framework (EU-SEC)



EU-SEC aims to create a framework under which existing certification and assurance approaches can co-exist. It has a goal to improve the business value, effectiveness and efficiency of existing **cloud security certification schemes**.

- **Multiparty Recognition Framework (MPRF)** for cloud security certifications,
- **Continuous Auditing-based Certification (CAC)**
- **Privacy Code of Conduct (PLA CoC)** , and



# Project Set Up and Partners

A successful cooperation under the hood of a common project

Funded by **EU Horizon 2020**, a funding programme created by the European Union to support and foster research in the European Research Area

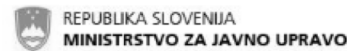
**9 Partners** (including CSPs, Cloud Users, Auditors, Scheme Owners and Researchers)

**Duration:** January 2017 - December 2019

**Web:** <https://www.sec-cert.eu/>

**Contact:** [contact@sec-cert.eu](mailto:contact@sec-cert.eu)

**Twitter:** @EU\_SEC





# EU-SEC Objectives

Applicability, flexibility and tool support



- **High level of security and privacy assurance and control** while the CSP enhances the Cloud Service, continuously.
- **Flexible and functional architecture and tools** for cloud security governance, risks management and compliance.
- Consolidated framework which can be **adapted to new technical, compliance and market requirements**, easily and promptly.
- **Cross-industry applicability** of the EU-SEC framework.



The U.S. National Archives

- Collect and maintain security and privacy requirements relevant to the public and private sector.
- Define the continuous auditing and certification framework and enable it for mutual recognition of existing certification and assurance approaches.
- Develop a governance structure to support trans-European EU-SEC framework adoption. Provide architecture and adapt existing tools to facilitate continuous auditing and control of security and privacy level service.
- Validate the framework with pilot use cases executed by public and private sector partners to ensure its effectiveness, efficiency and market readiness in large-scale demonstrators.
- Strengthen the value proposition, market uptake and long-term sustainability of EU-SEC framework through commercial exploitation, influencing other standardization initiatives and performing strategic awareness and training activities.



# Introduction to the MPRF

Damir Savanović, CSA



**Fig1. Compliance Templates Provided By Microsoft**



# Multiparty Recognition Framework

## Challenges of Certifications Proliferation

- CSPs pushed to invest resources in compliance audits
- Proliferation of certifications leading to:
  - Increased re-assessment costs?
  - Confusion of users?
  - Market barriers for SMEs?
  - Potential vulnerability (attack vector multiplication due to increased third-party access)?
  - Limit the right for member states to impose national security requirements?



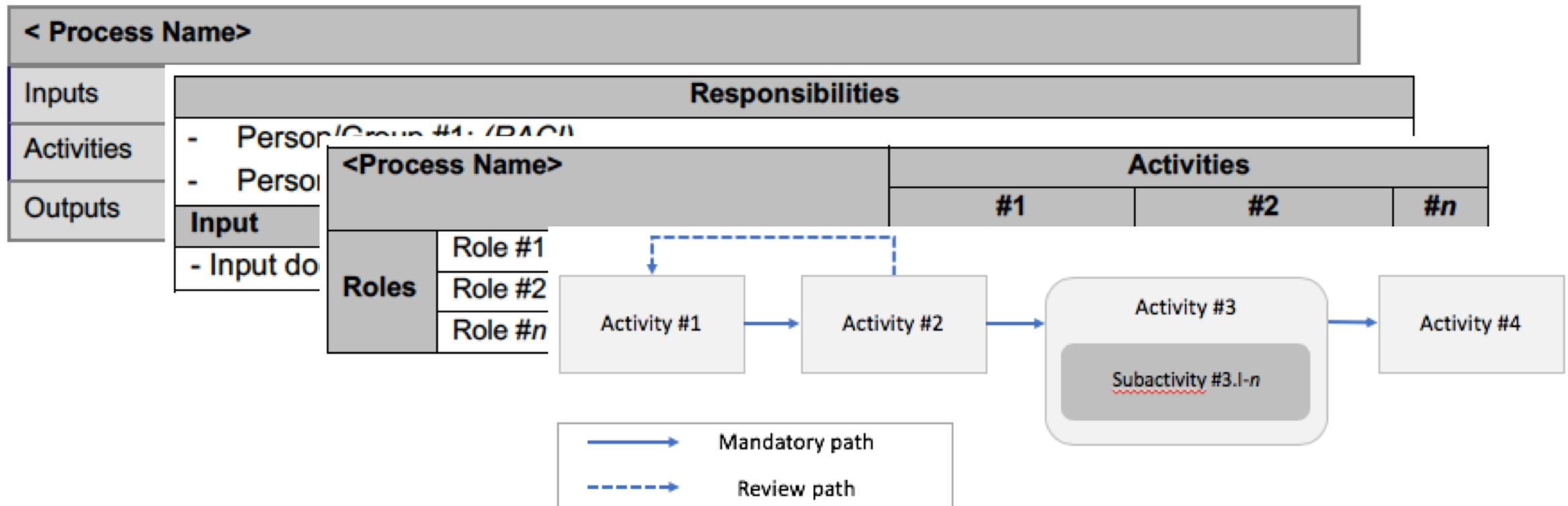
- Provide the means to **minimize the burden** for a CSP of obtaining certification "Y", once it has already obtained certification "X".
- Guide cloud stakeholders in **understanding the relationship** between information security and privacy requirements contained in various compliance schemes
- **Streamline the cloud compliance** process, bring efficiency, increase assurance and reduce re-assessments cost



# Multiparty Recognition Framework

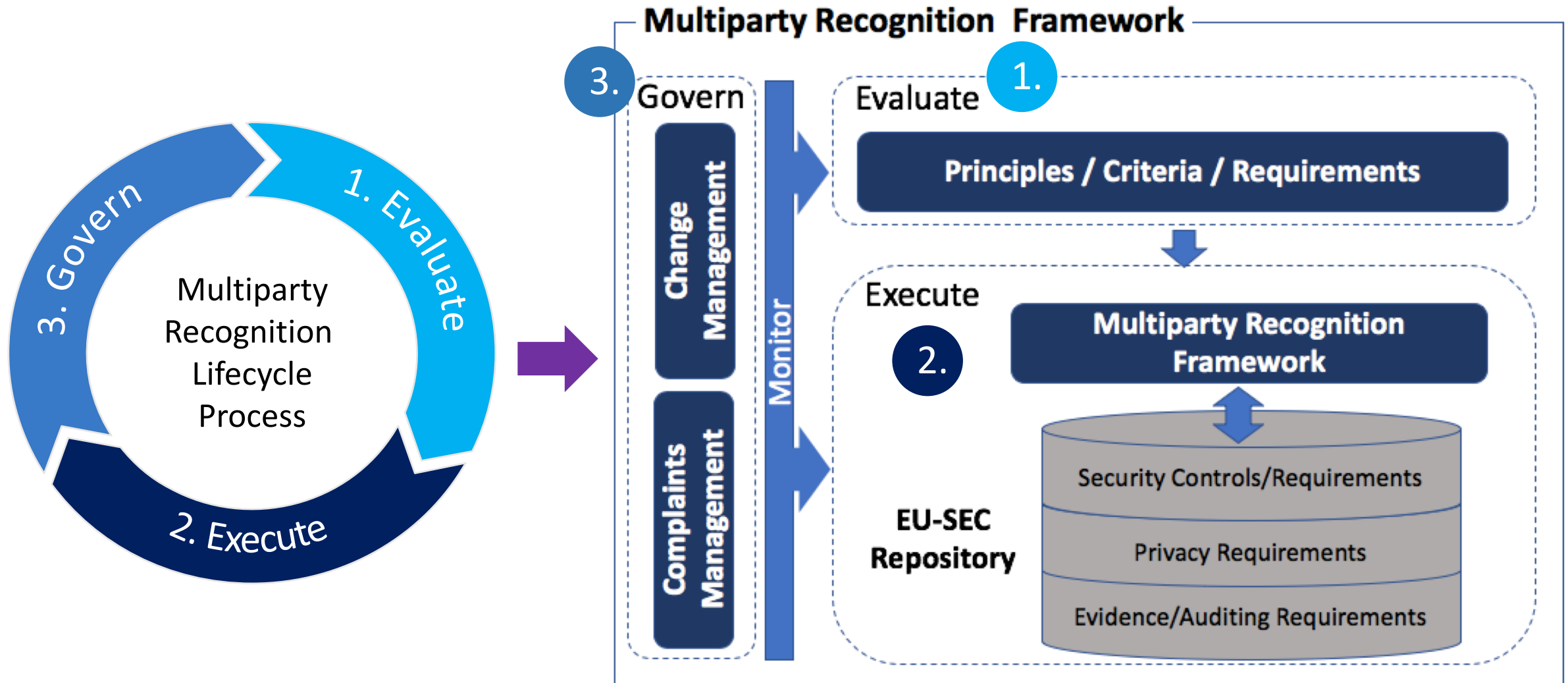
## Methodology

- Systematic organization and integration of activities and processes for multiparty recognition into a layered architecture
- Layered architecture is based on a comprehensive model of matrices and information flow diagrams



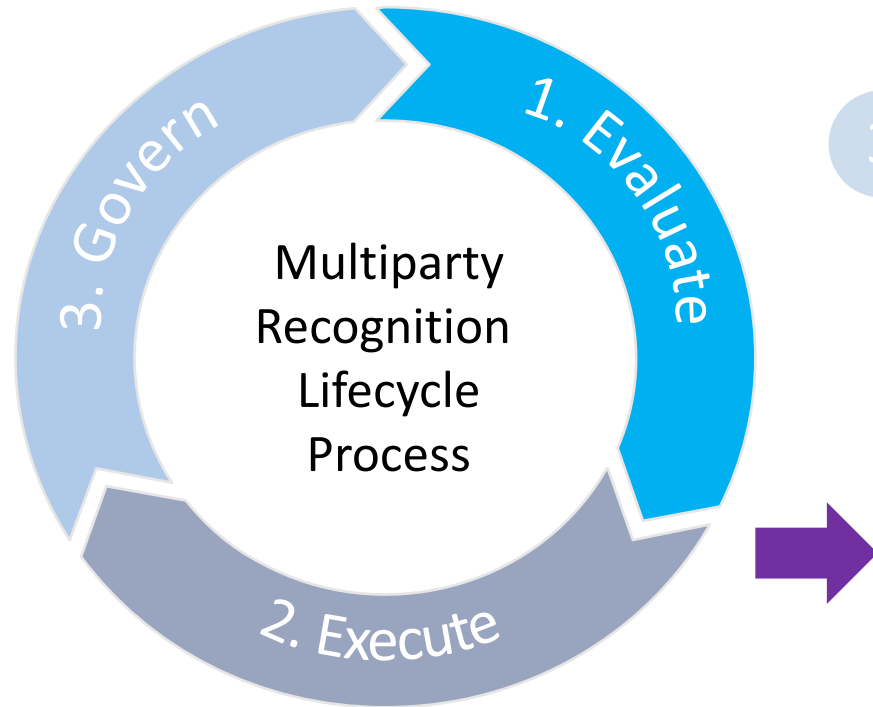
# Multiparty Recognition Framework

## Lifecycle Overview

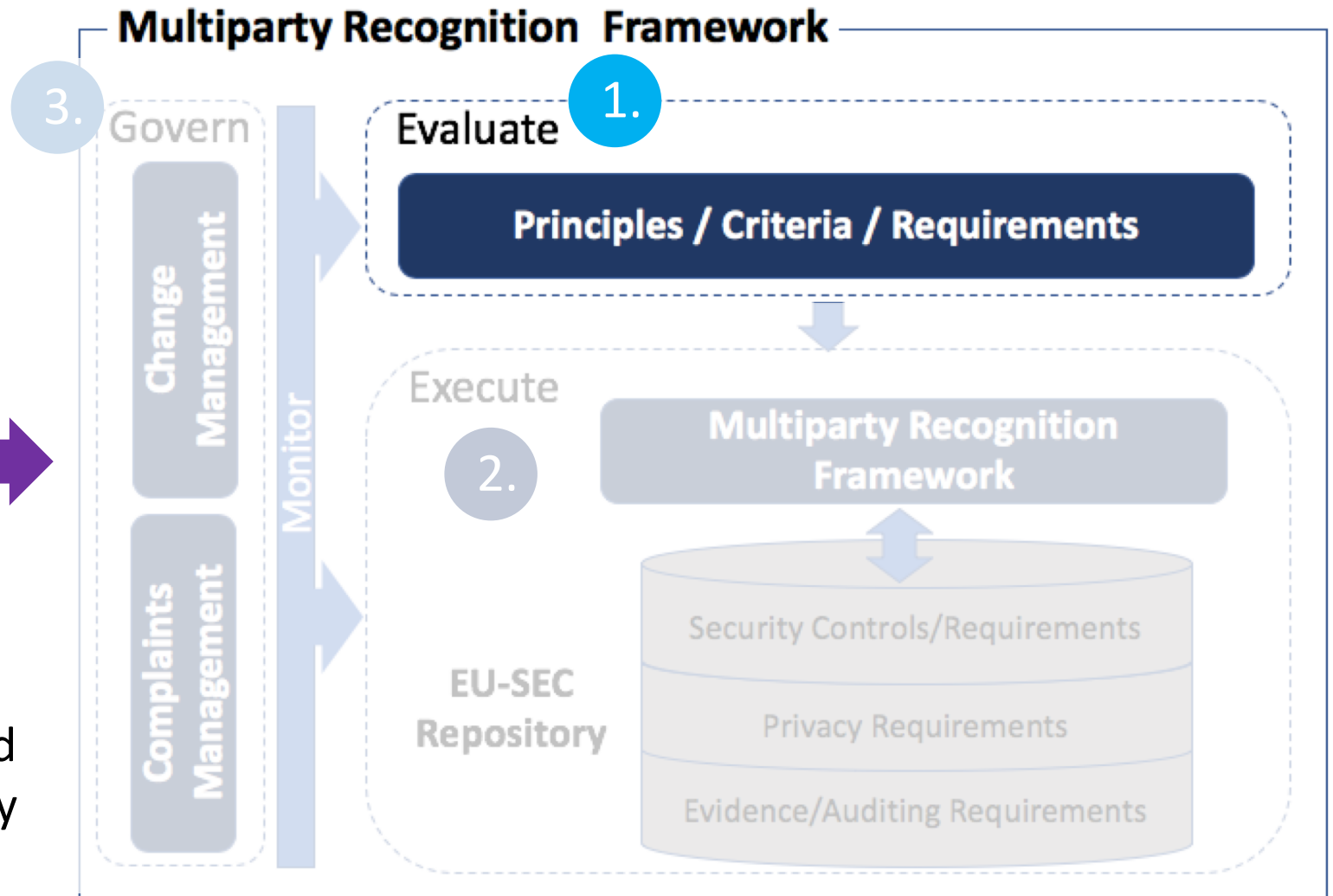


# Multiparty Recognition Framework

## Lifecycle Evaluate Phase



- Candidate scheme is evaluated against criteria and principles and found non-/eligible for multiparty recognition





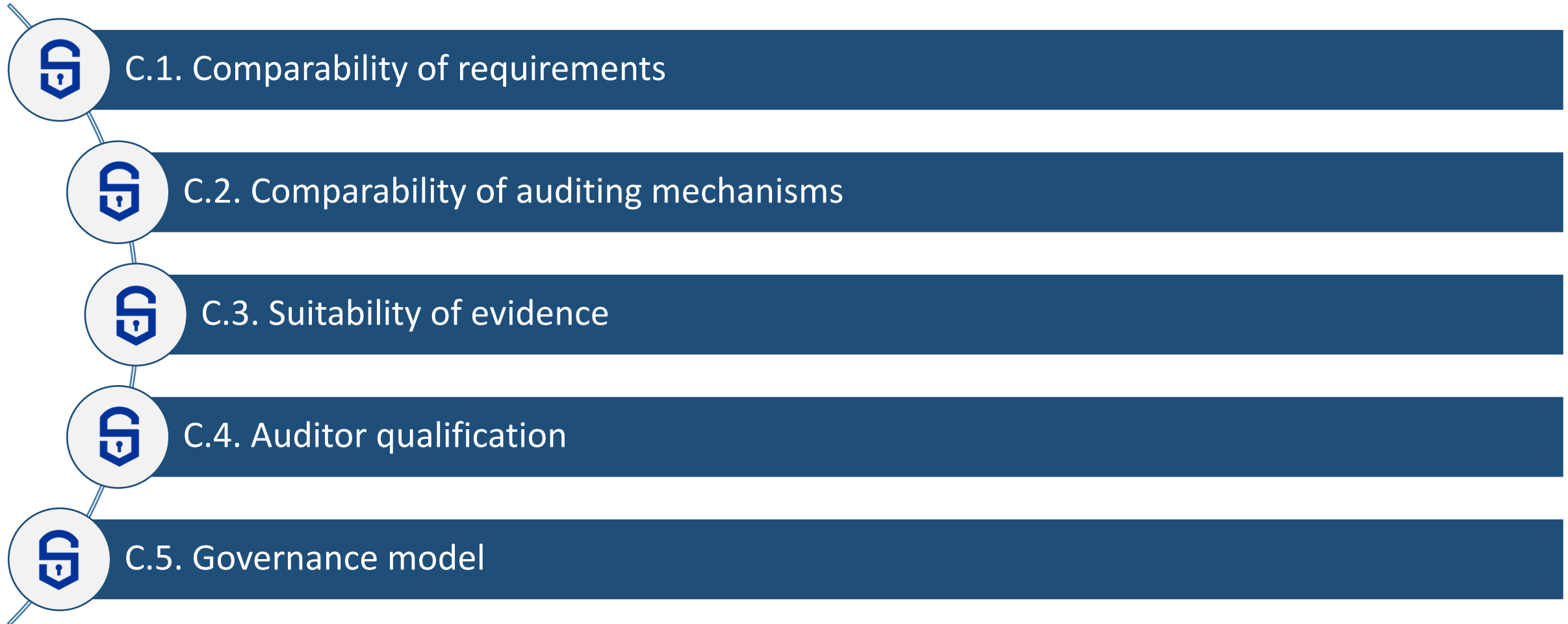
# Multiparty Recognition Framework

## Multiparty Recognition Principles

	P1. The repeatability principle	P2. The equivalence principle	P3. The relevancy principle	P4. Trustworthiness principle
Certification scheme	Results of two audits of the same security/privacy requirements under the same scope and conditions should be the same.	Assessment of a requirement should provide the equivalent level of security/privacy in different IS.	Requirements and the associated processes used should be selected so as to provide actionable information to the auditee.	Collection, verification and evaluation of evidence against audit criteria should be transparent, unbiased, complete and unambiguous in order to provide a trustworthy representation of the security/privacy.
EU-SEC Framework	Results of a comparison of requirements of two certification schemes, under the same conditions should be the same.	Comparison of requirements between schemes should provide equivalent level of security/privacy.	Not applicable	Comparison of two schemes should be transparent, unbiased, complete and unambiguous in order to provide trustworthy results.

# Multiparty Recognition Framework

## Multiparty Recognition Criteria



# Multiparty Recognition Framework

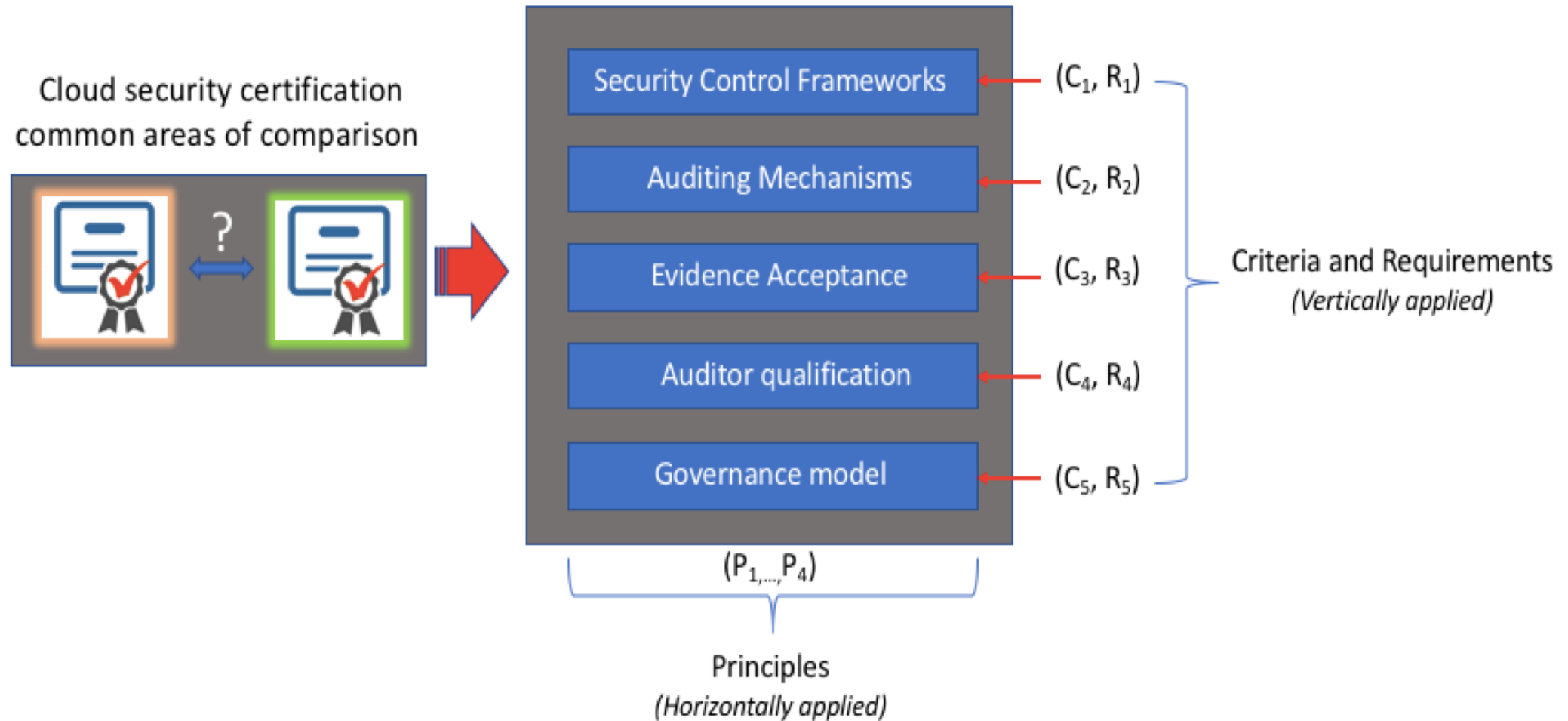
## Multiparty Recognition Requirements (sample)

Requirement	Criteria	Principle
<b>Comparability of Control Framework (R1)</b>		
R1.1 The EU-SEC Governing Body shall perform the mapping and gap analysis of requirements of different certification schemes.	C.1.	P1, P2, P4
R1.2 The EU-SEC Governing Body shall determine the nature of the gaps between the requirements of different certification schemes.	C.1.	P2, P4
R1.3 The EU-SEC Governing Body should suggest the compensating requirements to bridge the identified gaps between the requirements of different certification schemes.	C.1.	P2, P4
R.1.4. The EU-SEC Governing Body should adopt a clear, well documented and transparent approach for performing a comparison and gap analysis between requirements of different security frameworks.	C.1.	P4
R1.5 The Authority should accept the requirements mapping, gap analysis and potential compensating requirements of the EU-SEC framework.	C.1.	P4



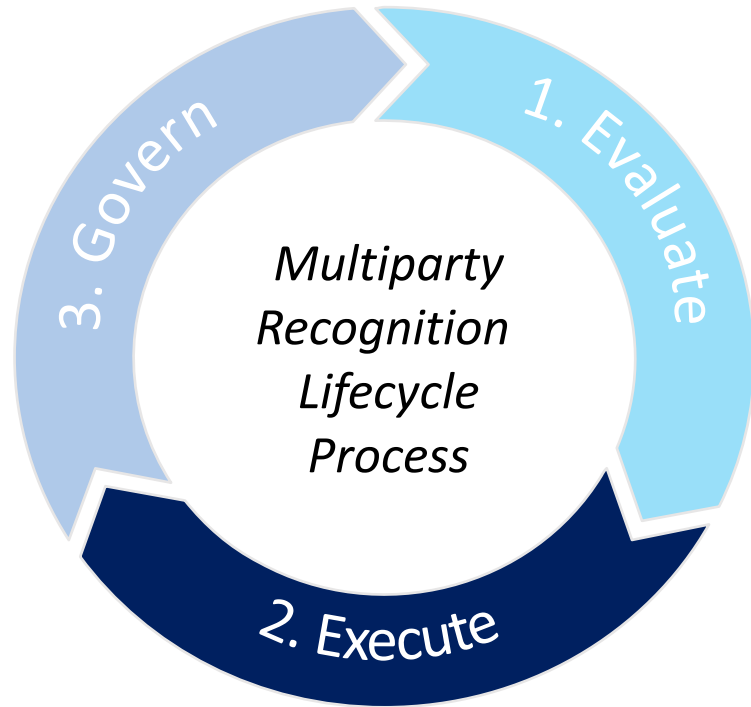
# Multiparty Recognition Framework

## Key Certification Scheme Components

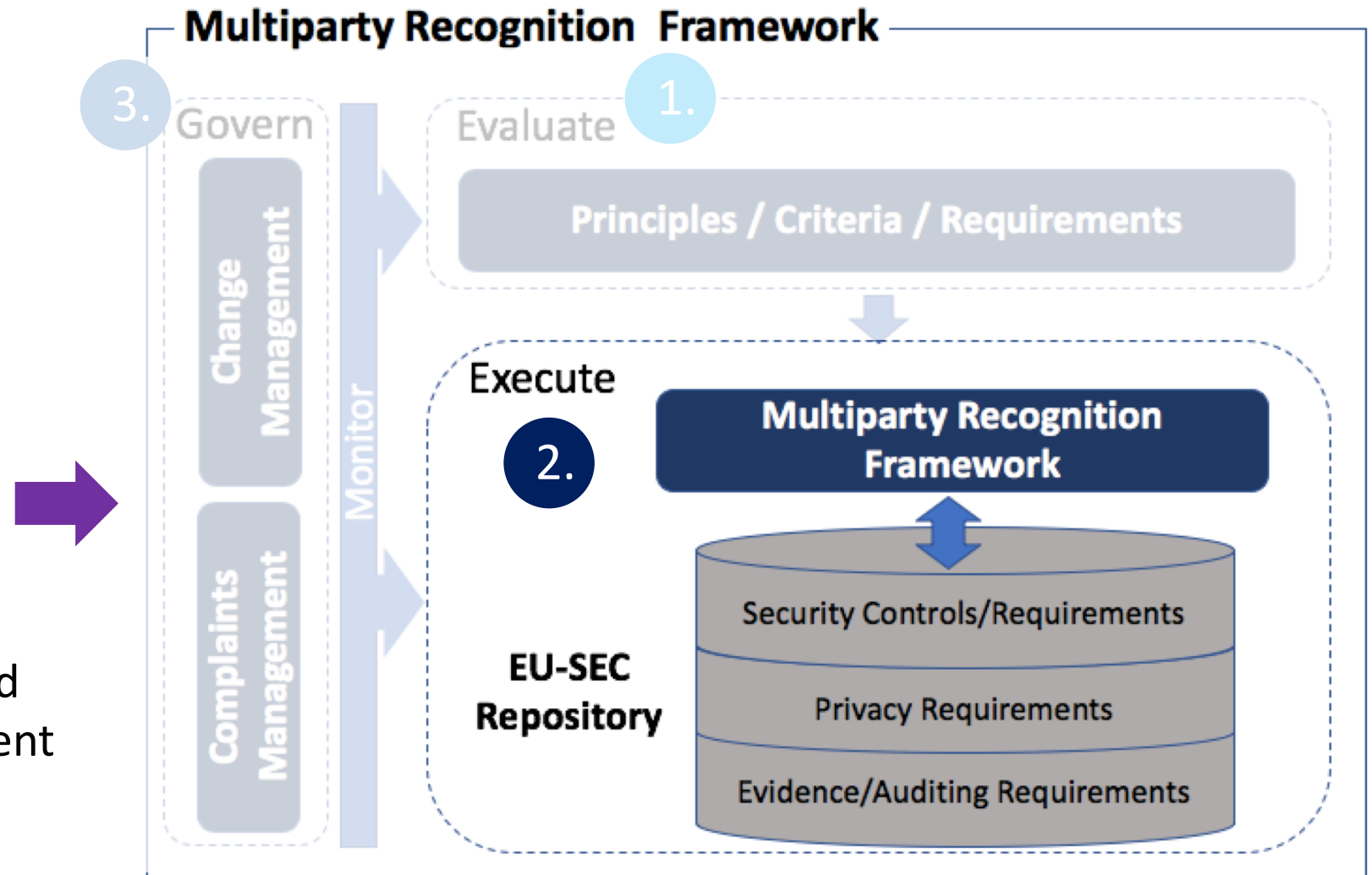


# Multiparty Recognition Framework

## Lifecycle Execute Phase



- Enables the comparison and recognition between different auditing standards



# Multiparty Recognition Framework

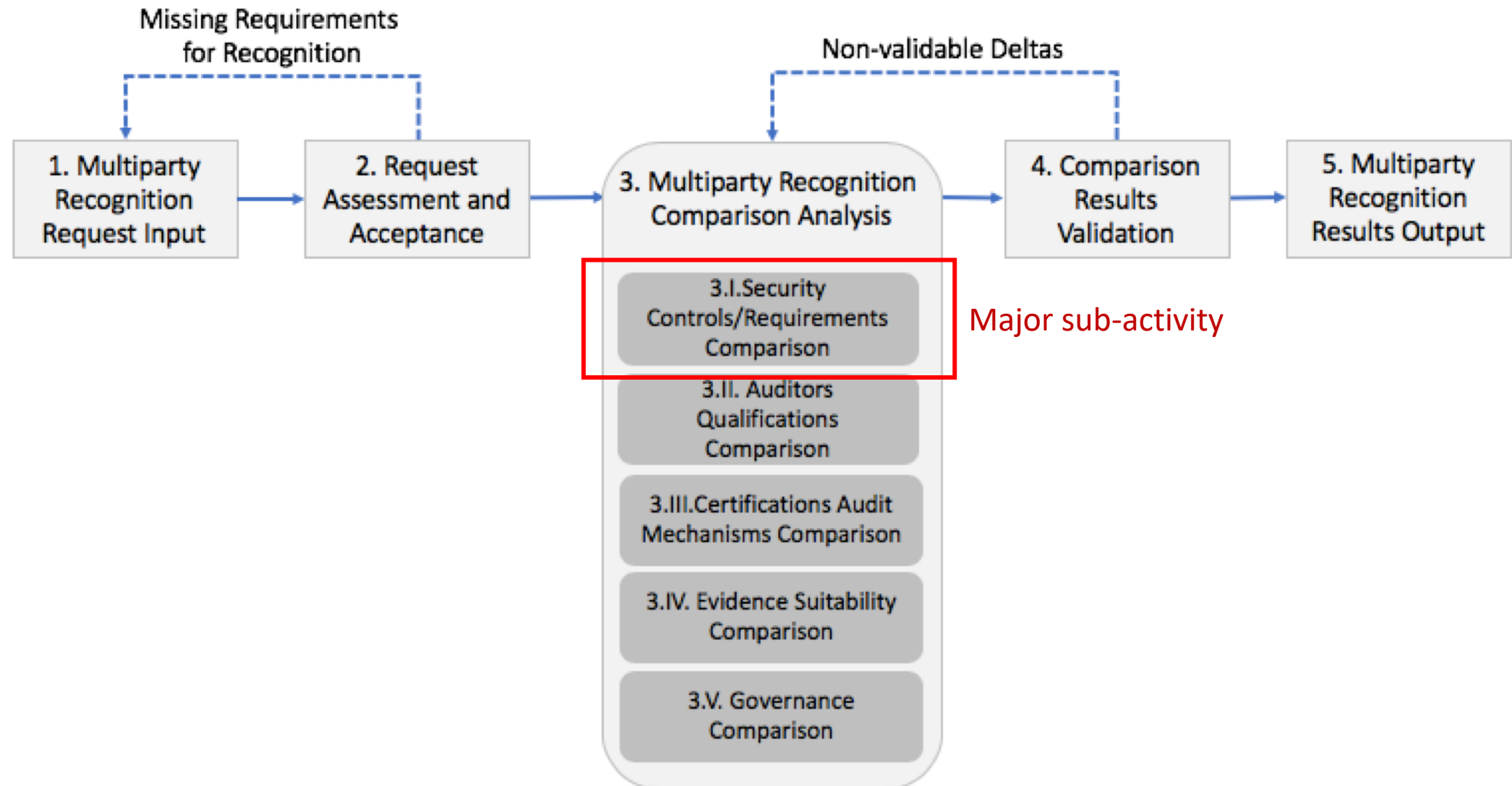
## Activities Overview

- 1 Multiparty Recognition Request** is the provision and collection of inputs that will be fed to the framework, involving requests from the compliance schemes to initialize the multiparty recognition framework process.
- 2 Request Assessment and Acceptance** evaluates the request against the multiparty recognition framework's criteria such as comparability of the requirements and governance model, and principles such as relevancy and transparency. Approval of the request is required to initialize the correlation and gap analysis of the submitted compliance scheme.
- 3 Requirements Correlation and Gap Analysis** involves the analysis of the submitted compliance scheme and is a critical activity to enable the multiparty recognition. The correlation and analysis is performed in three (3) main categories: security requirements, auditing requirements and governance requirements
- 4 Results Validation** receives input from the requirements correlation and gap analysis and assesses the results. Any deltas that are found to be unacceptable by the requesting compliance scheme owner, are fed back to the previous activity for further correlation and gap analysis. This is a feedback cycle that is continued until a satisfactory result is achieved.
- 5 Dissemination** releases the final results of the correlation and gap analysis to the EU-SEC (security and auditing) requirements repository.



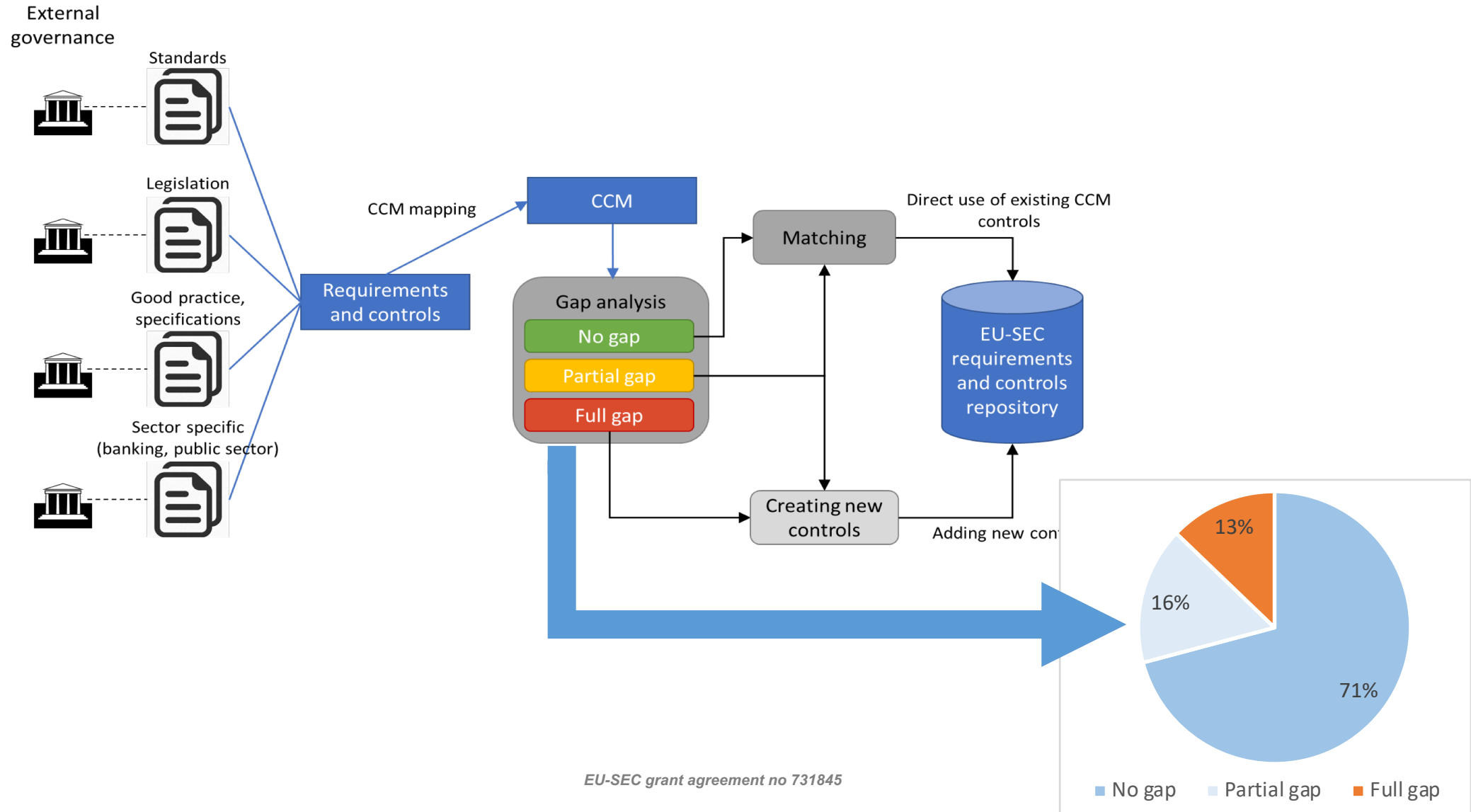
# Multiparty Recognition Framework

## Operational Diagram



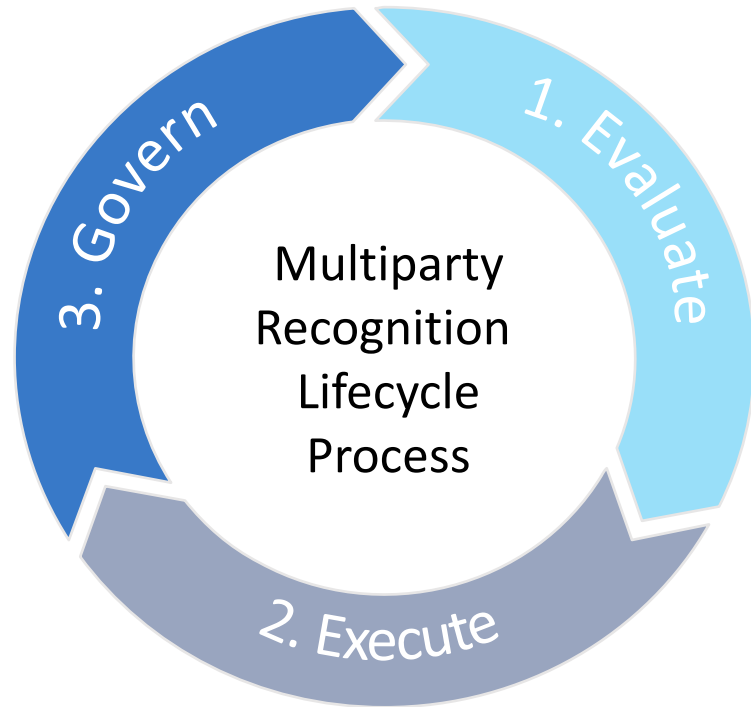
# Multiparty Recognition Framework

## Requirements Collection and Analysis

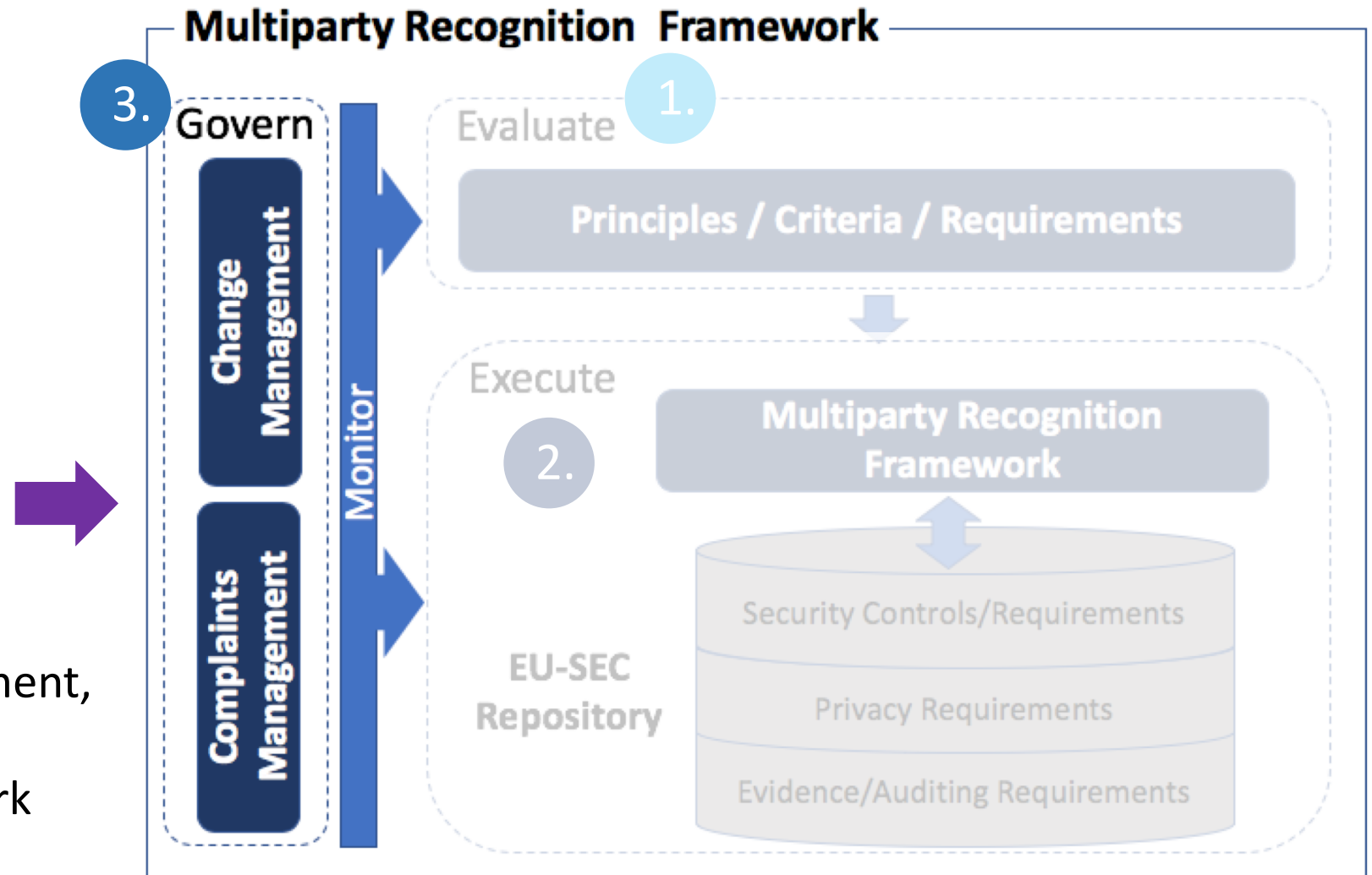


# Multiparty Recognition Framework

## Lifecycle Govern Phase



- Ensures continuous improvement, maintenance and future sustainability of the framework





# Multiparty Recognition Framework

## Governance Components

### Governance structure

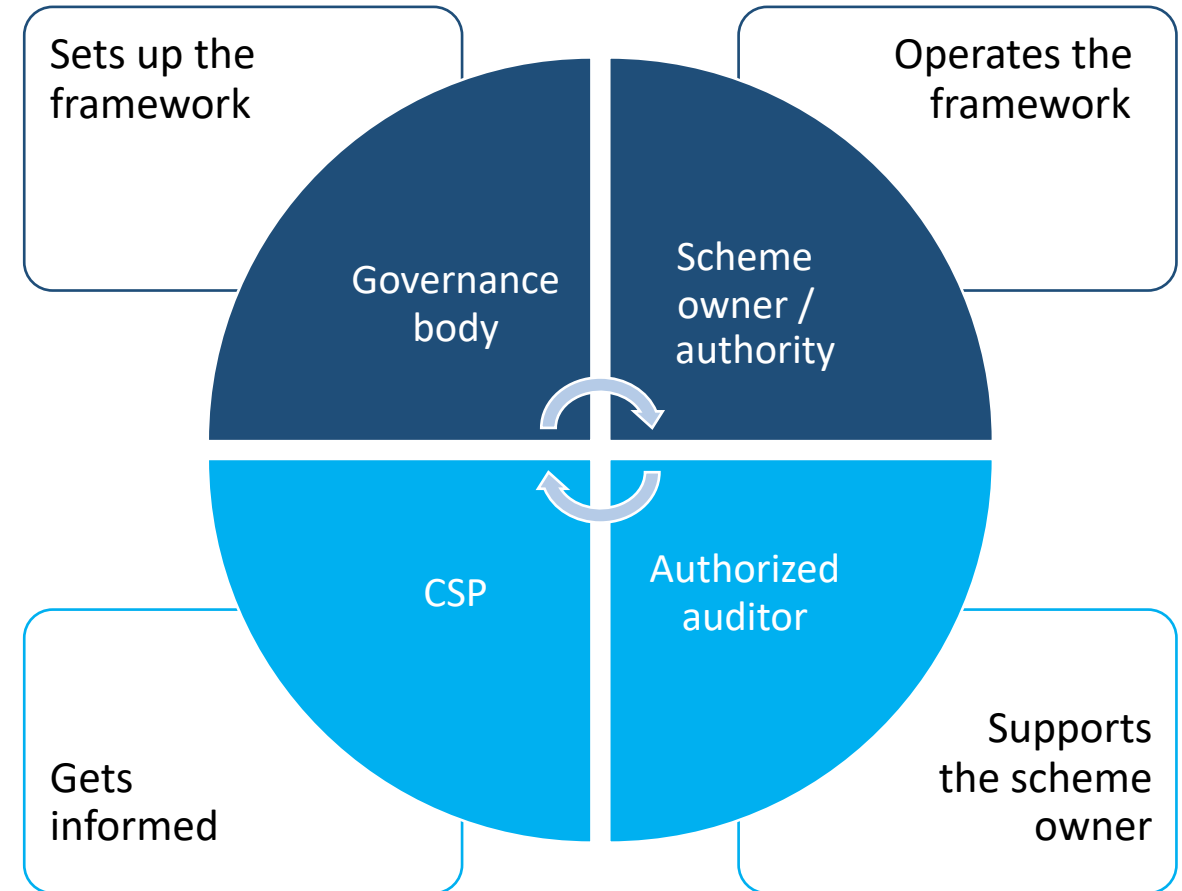
- **Assets:** The framework's assets affected by the governance processes and required changes
- **Stakeholders:** The stakeholders along with their roles and responsibilities
- **Processes:** The governance processes and related activities

### Governance processes

Two process types:

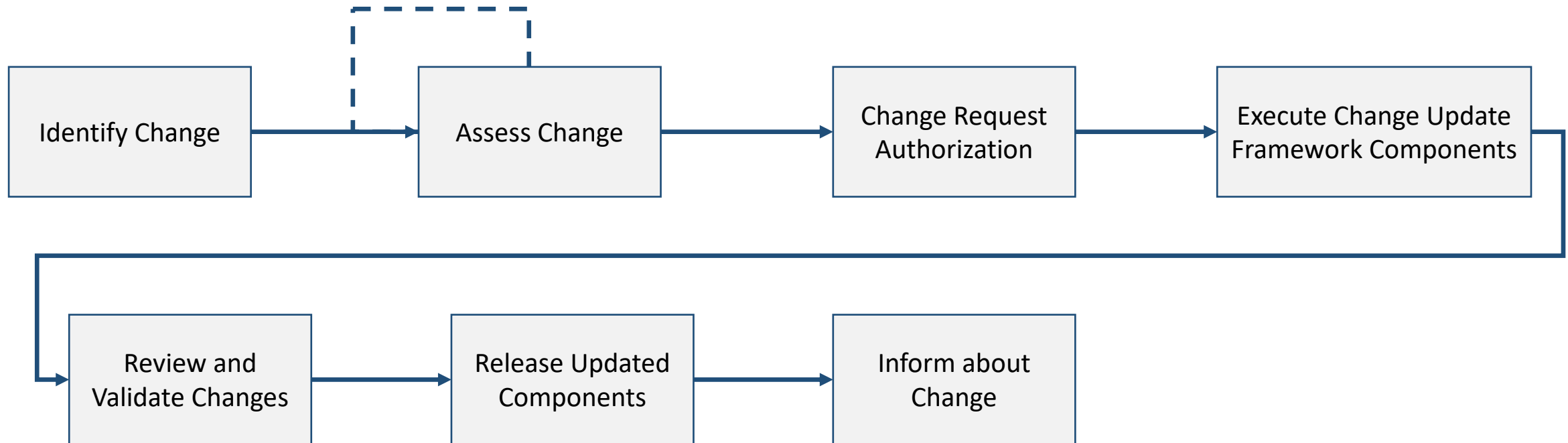
- Change management process
- Complaint management process

### Stakeholders



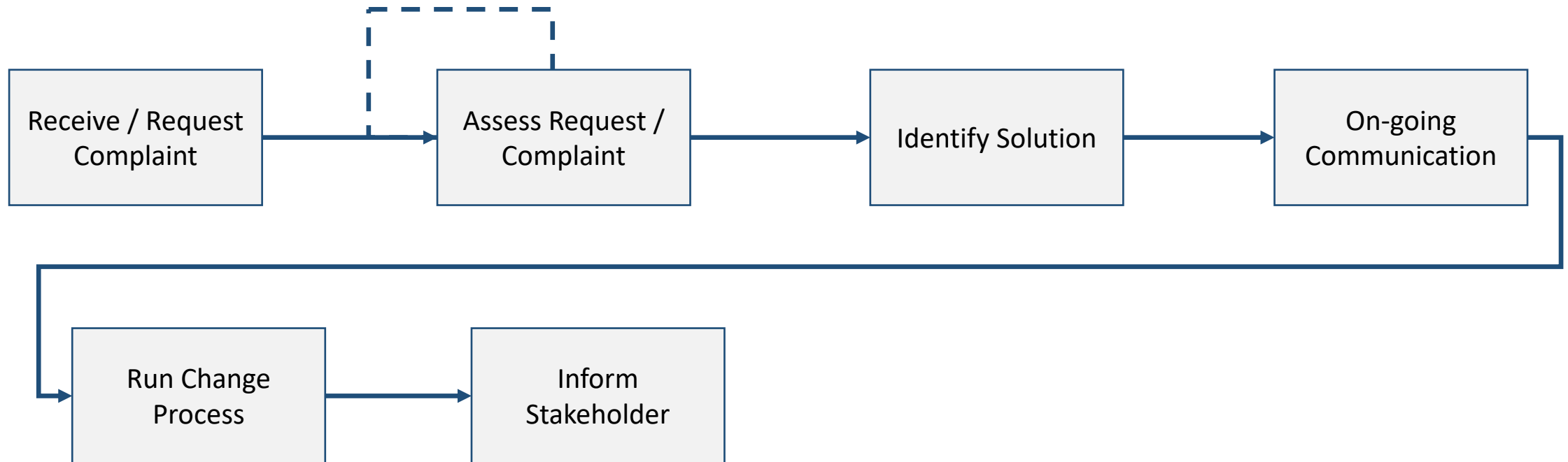
# Multiparty Recognition Framework

## Change Management Process Diagram



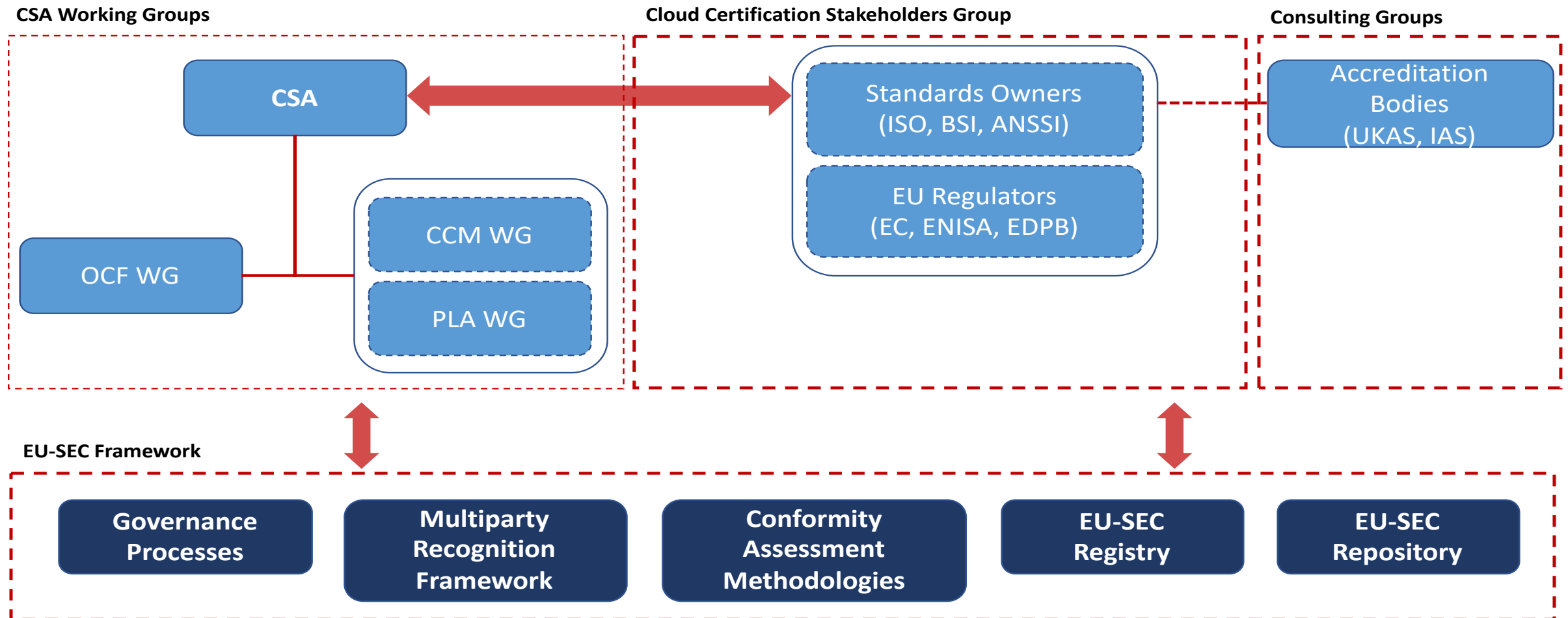
# Multiparty Recognition Framework

## Complaint Management Process Diagram



# Multiparty Recognition Framework

## EU-SEC Framework Governance Body





# Business Drivers for MPRF

## Value Proposition – Cloud Service Providers

- **Saving money:** reduction of cost of compliance
- Streamlining the compliance approach (more effective)
- Reducing security risks (less auditors approaching your data)
- **Transparency and clarity to the cloud customer:** one standard of reference to enable comparison and integration between many different ones.

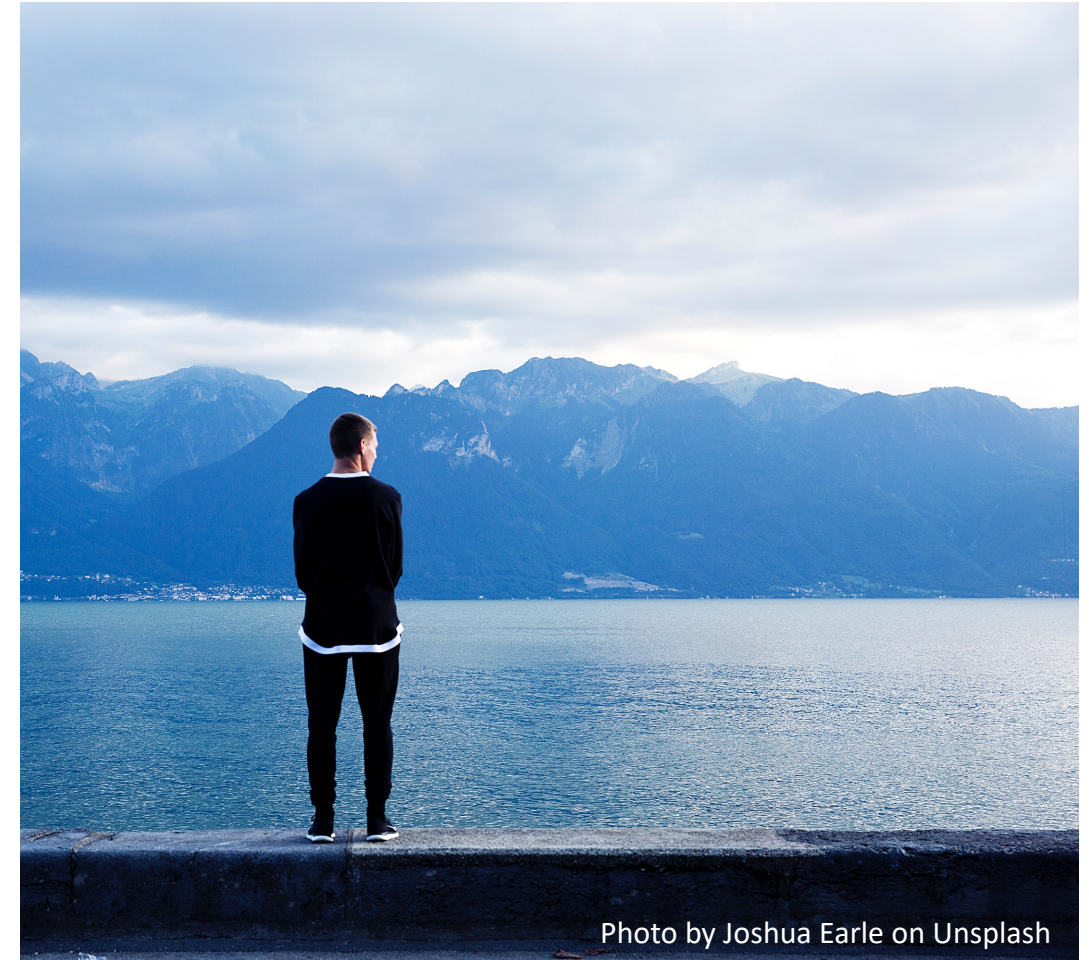


Photo by Joshua Earle on Unsplash

# Business Drivers for MPRF

## Value Proposition – Auditors / Consultants

- **Streamlining the auditing process:** a better and more effective auditing process
- **Competitive advantage** through the reduction of work caused by the reduction of auditing time (overlapping controls are minimized) (auditors)
- **Extension of service portfolio** (consultants)
- **Extension of the training portfolio** (auditors, consultants or other training institutions preparing CSPs and auditors for audits with education, training, etc.)

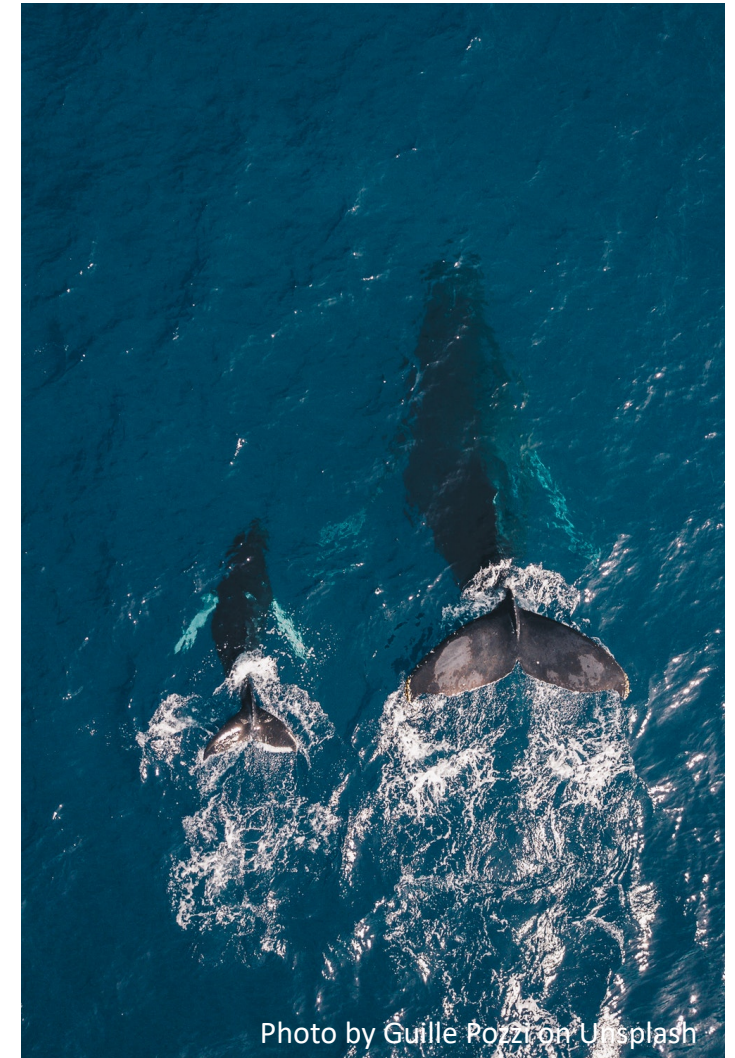


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# Business Drivers for MPRF

## Value Proposition – Cloud Customers

- **Improved transparency and clarity:** one standard of reference to enable comparison and integration between many different ones.
- **Better understanding** which cloud service can be trusted



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# Business Drivers for MPRF

## Value Proposition – Scheme Owners

- Ensure that their certification schemes address the stakeholders' needs
- Connected with the legal / regulatory landscape, e.g. alignment with EU Cyber Security Framework requirements
- MPRF enables certification bodies to monitor and track the need for evolving their schemes and standards
  - Opportunity to review their own scheme on a regular basis
  - Potential for collaboration between certification bodies or compliance scheme owners

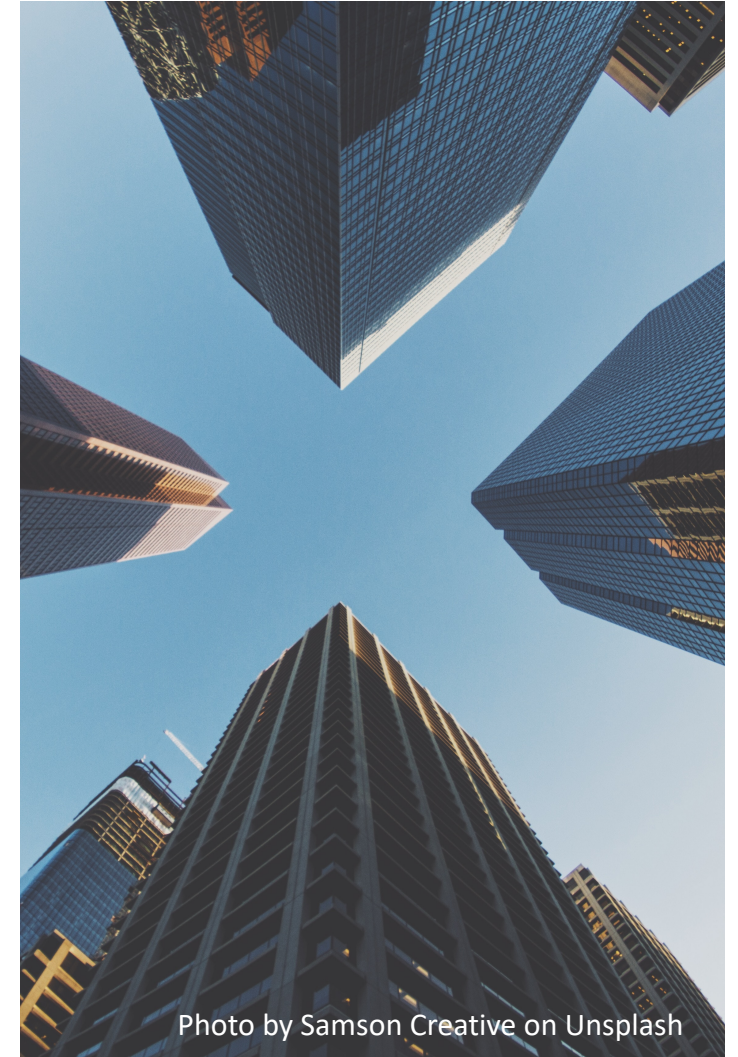


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# Multiparty Recognition Framework

## Conclusions

- Multiparty recognition activities are performed at an unambiguous, organized and systematic method by using the multiparty recognition framework
- The manageability and scalability of the proposed architecture allows for rapid adaptation to the evolving cloud security certification landscape
- Multiparty recognition results are expected to be repeatable and consistent
- Awareness and trust towards the multiparty recognition works is promoted among the involved stakeholders



# Multiparty Recognition Framework

## References

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- EU-SEC D1.2 – Security and Privacy Requirements and Controls  
<https://cdn0.scrvt.com/fokus/4112ec5d1d3b7fc8/d1fad2a9efd9/EU-SECSecurity-and-privacy-requirements-and-controls-V1.4.pdf>
- EU-SEC D1.3 – Auditing and Assessment Requirements  
<https://cdn0.scrvt.com/fokus/5b691b538684c9ce/d50f4e66491d/D1.3-Auditing-and-assessment-requirements-V1.0.pdf>
- EU-SEC D1.4 – Principles, Criteria and Requirements for a Multi-Party Recognition and Continuous Auditing Based Certifications  
<https://cdn0.scrvt.com/fokus/c56a737828fef8cf/79add0dec99a/D1.4-Multiparty-recognition-V1.0.pdf>
- EU-SEC D2.1 – Multiparty Recognition Framework for Cloud Security Certifications  
<https://cdn0.scrvt.com/fokus/3d519f94c6002bb6/8389914796dc/EU-SEC-D2.1-Multiparty-Recognition-Framework-V1.1.pdf>

# Real Life Implementation of MPRF

Cristóvão Cordeiro, SixSQ  
Björn Fanta, Fabasoft



### **Validation of the proposed MPRF solution is required!**

- This validation includes the assessment of both the framework's theoretical model and technology readiness level of the supporting tools
- Four different partners have taken the role of auditee in four separate audits, conducted by two auditors
- This exercise was conducted on top of the knowledge built within the project
  - It had a duration of approximately 12 months
  - Its results have been fed into the continuous improvement process of the multiparty recognition framework

# Multiparty Recognition Pilot Exercise

## Pilot Definition

ISO auditor

**nixu**  
cybersecurity.

ISAE auditor

  
**pwc**



REPUBLIC OF SLOVENIA  
MINISTRY OF PUBLIC ADMINISTRATION

- SI-MPA holds an ISO27001 attestation
- Wants to assess compliance with ISO27017, CSA CCM and SI national requirements
- The audit's scope targets these Slovenian Government Cloud:
  - On-demand self service
  - Broad network access
  - Resource pooling
  - Rapid elasticity and measured service



Ministerstvo financií  
Slovenskej republiky

- Starting from ISO27001, MFSR assesses compliance with ISO27017 CSA CCM and SK national requirements
- The SK national requirements are not fully established at the time of the audit
- The audit's scope targets the construction of G-Cloud in Slovakia and its IaaS services



- Starting from ISO27001 SixSq assesses compliance with ISO27017 and CSA CCM
- Evidence Store is integrated with Nuvla, so SixSq also tests its readiness
- Not being a CSP but instead a digital service provider, SixSq has its audit's scope targeting the Development and Operations of software, products and services built inside the company

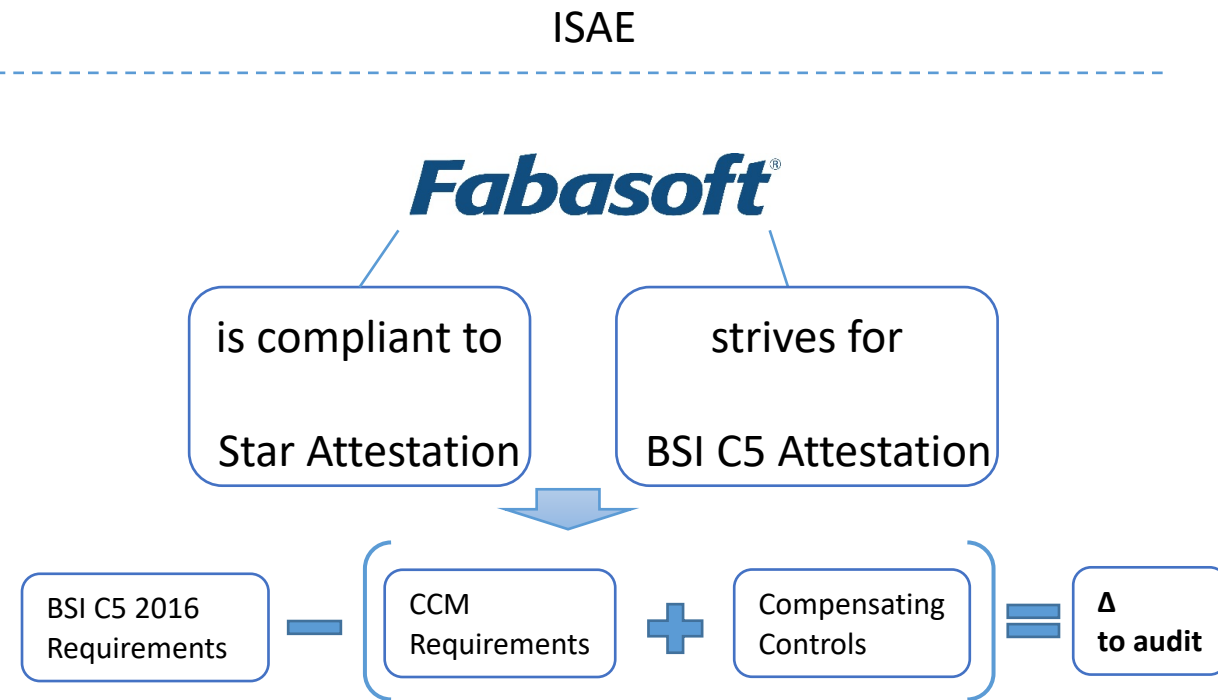
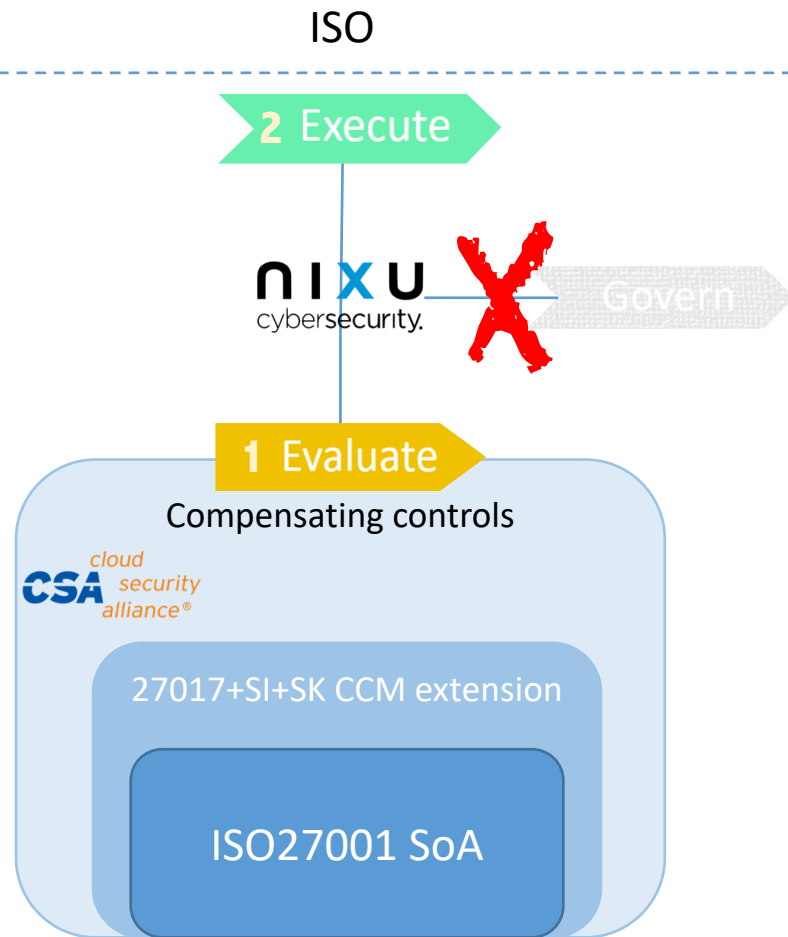
**Fabasoft**

- Fabasoft starts from a Star attestation and strives for compliance with BSI C5
- Focus on identifying gaps and non-conformities
- Need to consolidate and trust on the gap analysis



# Multiparty Recognition Pilot Exercise

## Pilot Definition



# Multiparty Recognition Pilot Exercise

## Pilot Definition

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1. Validate the MPRF model and its 5 core activities as defined in its Lifecycle phases
  - i. Auditee selects reference and target certifications to be used for multiparty recognition
  - ii. Reference and target certifications are compared using MPRF's theoretical model
  - iii. EU-SEC repository is extended with target certification's requirements (to use for audit)
  - iv. Validation results are analyzed and provided as feedback to WP2
2. Perform an MPRF-based audit using the output results of the MPRF's validation activities
  - i. Establish auditee's service scope
  - ii. Build the Statement of Applicability (SoA) based on extended EU-SEC repository
  - iii. Collect new evidence for target certification(s) additional requirements
  - iv. Conduct the Audit
  - v. Produce MPRF-based audit feedback and confidential audit report
3. Assess the readiness of the repository of evidences (w. Nuvla brokerage platform)

# Multiparty Recognition Pilot Exercise

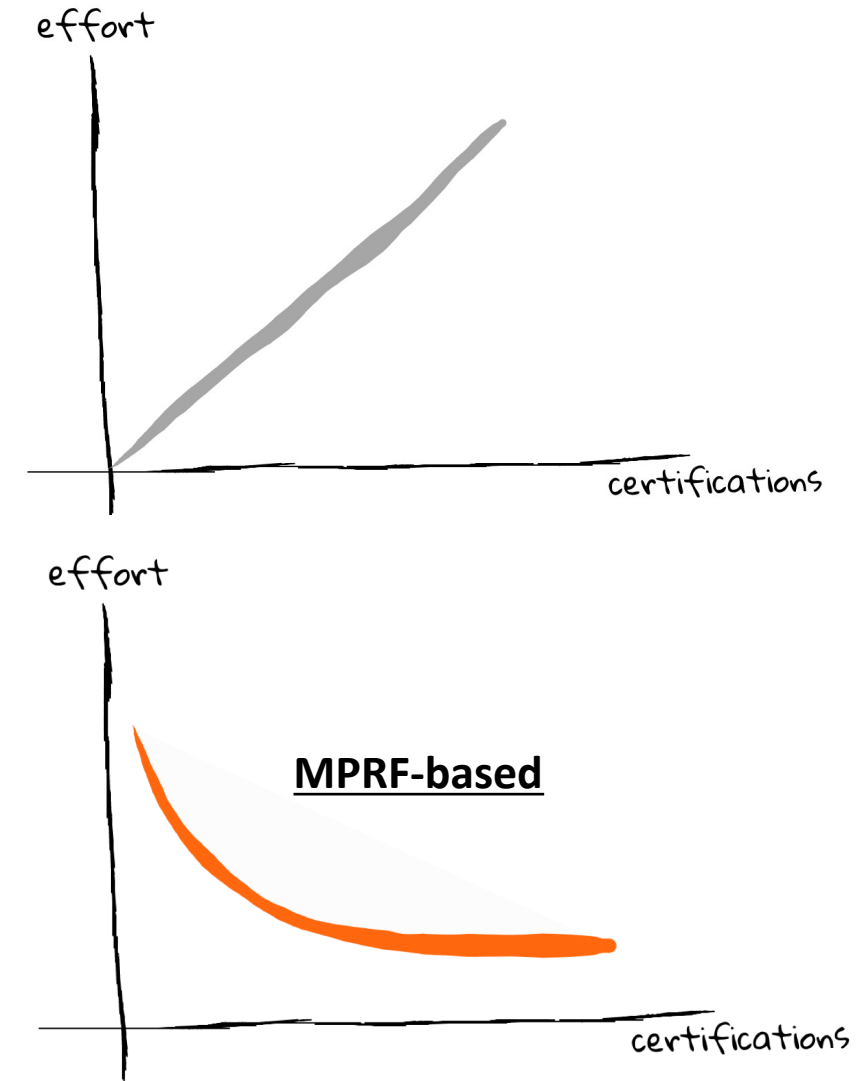
## Pilot Results

Feedback	Recommendation
<b>Introduce operational guidelines</b>	<ul style="list-style-type: none"><li>• Improve the existing process descriptions and write guidelines on how to apply the framework, addressing scheme owners, auditors and auditees;</li><li>• These guidelines should include operational manuals and overall explanatory documentation of the framework;</li></ul>
<b>Mappings requirements' descriptions prone to subjective interpretation</b>	<ul style="list-style-type: none"><li>• Get the preliminary interpretations and expert opinions. Then an "appropriate experts group" (to be defined) either accepts or rejects the change (also valid for the consistency issue above). This task would fall into the jurisdiction of the Governing Body.</li></ul>
<b>Increase end-user awareness (also those cloud-agnostic)</b>	<ul style="list-style-type: none"><li>• In addition to the operational guidelines, create proper marketing material that address not only CSPs but also any other company looking to get compliance with multiple certifications;</li><li>• Build a story board as part of the EU-SEC dissemination plans and framework usage manuals, explaining what's the motivation for using the framework, in which circumstances it should be used, and how.</li></ul>
<b>Repository usability &amp; efficiency</b>	<ul style="list-style-type: none"><li>• Migrate the EU-SEC repository of requirements from Excel to a less error prone format, e.g. a database application with a simple interface for managing requirements and mappings.</li></ul>

# Multiparty Recognition Pilot Exercise

## Conclusions

- Applying the framework provides significant potential to reduce the effort and resources needed to achieve multiple certifications, except when applied within the same family of standards, like ISO27001 and ISO27017
- The auditing process was not affected when using MPRF
- The Framework is not a shortcut in understanding multiple requirement sets, but instead it serves as a streamlining tool



# MPRF for Auditees

Björn Fanta, Fabasoft

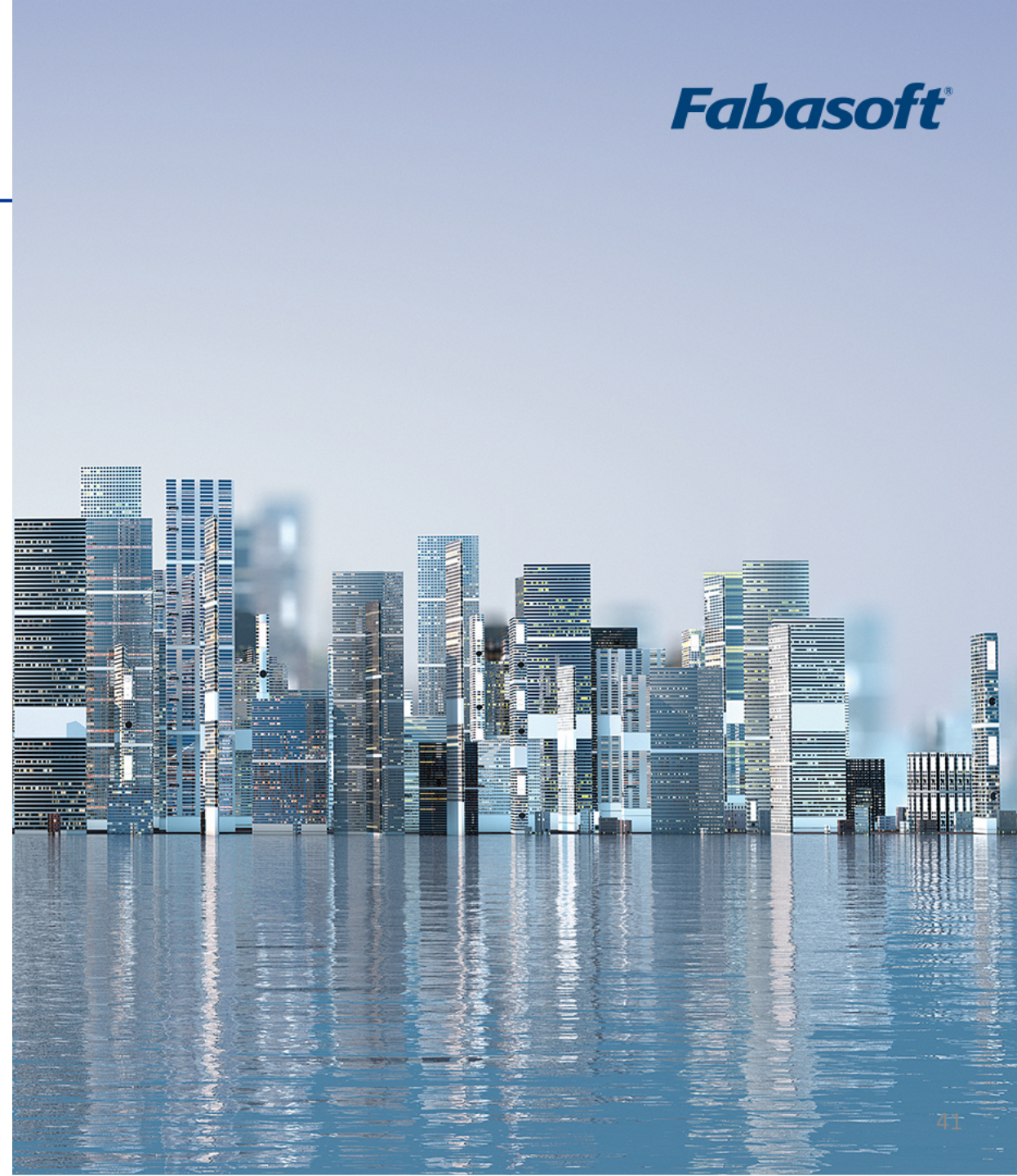


# Multiparty Recognition Pilot Exercise

## Customer Perspective

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- **Facts about the pilot customer:**
  - European Cloud Service Provider
  - SME (~240 employees; € ~30 million sales revenue)
  - More than 10 certificates
- **Costs on audits and certificates:**
  - approx. € 220,000 over the last three years!
  - + 2 FTE managing an organizational unit for (security) certification





# Multiparty Recognition Pilot Exercise

## Customer Perspective

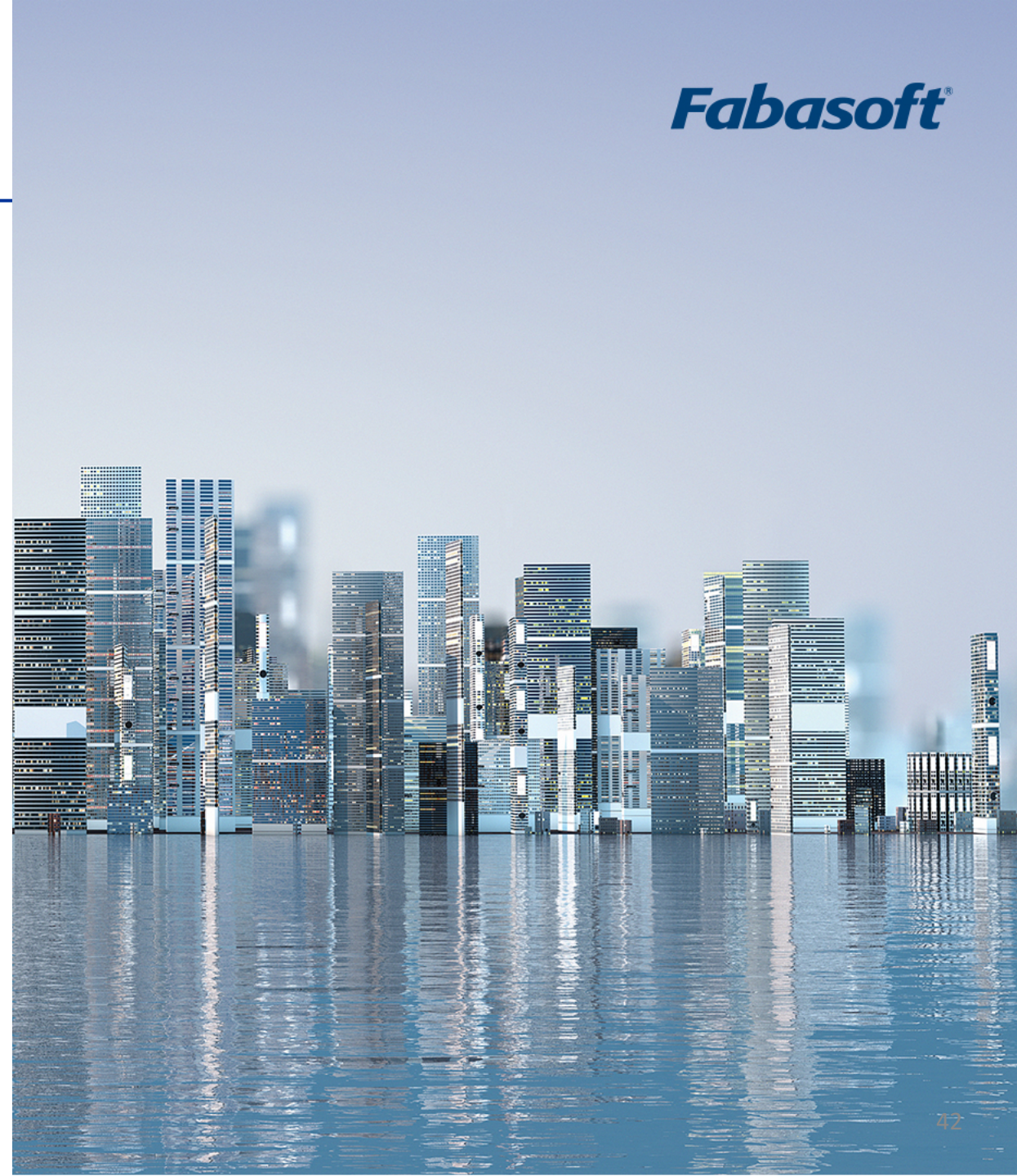
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- **Learnings:**

- The effort for certifications can be reduced significantly
- Benefits for using the MPRF starts at two certifications
- The learning curve can be compared the effort of establishing the knowledge of an additional (desired) certification

- **(Business) Benefits:**

- Cost reduction for multiple certification
- Comparability between schemes
- Possibility of a single source of information for internal staff





## Okay, but how can I benefit?

- **Step 2a:** establish your actual (technical) implementation for each requirement.
- **Step 2b:** do your individual mapping of your controls to your repository of requirements.
- **Step 2c:** with your individual mapping, reach out to an auditing company of your choice and ask for the MPRF approach.
- **Step 2d:** the auditors will provide you with your set of requirements (step 1) and their acknowledged mapping of your controls



# MPRF for Auditors

Tatu Suhonen, Nixu



# MPRF – What is the interest to auditors?

- **Competitive advantage** for certification bodies
  - Addition to service portfolio
    - Existing competence can be used in a new service
  - New business opportunities
  - One stop shop –approach as a business model: Offer multiple certifications with smaller costs compared to multiple full scope-audits for each standard



# MPRF – What is the interest to auditors?

- **Less costs with smaller effort**
- Competitive advantage by streamlining the audit efforts
- Focus on delta
  - Audit process is more efficient when like controls and requirements are consolidated and checked
  - Required time and effort from auditor decreases
    - Less auditing days
- Audit process is the same
  - No steep learning curve for existing auditors





# MPRF – Auditing multiple standards in one audit

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- Combined audit to achieve multiple certifications
  - Two (or more) certifications in one audit
  - Use the same evidence for both standards
    - Collect once, use for multiple purposes
- Single audit process
  - Auditing requirements analysis as a basis for requirements in auditing
  - Detailed planning is necessary to ensure a successful audit
    - Scoping, control intention/interpretation, evidence collection...
  - Auditors are required to have knowledge of all audited standards
- Audit team working more efficiently
  - Avoid 2 auditors checking the same controls
  - Overall audit effort reduced
  - Audit team could potentially be smaller or work can be divided more efficiently

# Ways auditors can interact with the MPRF governance body

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- Auditors are a valuable stakeholder for the governance body
  - Subject matter expertise in auditing
  - Auditors can offer development ideas and constructive feedback based on their auditing experience
  - Active role in MPRF processes ensures interaction with governing body
- Governance body can offer support and guidelines
  - Auditor community requires unified procedures to provide consistent results
  - Governance body can provide the required support for auditors
    - How-to guidance will help auditors to implement and use MPRF
    - Governance body can provide training and mentoring

# Ways auditors can participate in MPRF processes

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- Auditors are involved in all of the MPRF activities 1-5
  - Auditors' role is consultative
    - To prevail impartiality consultancy is provided to the governance body, not the auditee!
- Auditors are subject matter experts in auditing so contribution is valuable especially in requirements comparison and validation
  - Requirement/control interpretation based on previous auditing experience
  - MPRF output is the tool for the auditor
    - Consultation prevents inconsistencies and ensures that the audit is successful

# Ways auditors can participate in MPRF processes

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- Change Management Processes
  - Request for change of MPRF output results in the repository
  - Auditing guidelines
- Complaint Management Process
  - Complaint submission which could refer to operational or governance related objections that an auditor may have with regards to the MPRF's processing methodology and outputs

# Auditing in MPRF-based audits

- Same auditing processes can be used (ISO & ISAE approaches)
- No additional competence requirements
  - Required qualifications defined by each involved standard
- Audit effort definition needs to evaluate the effect of reduced amount of controls
- Acceptable evidence collection methods are defined by each involved standard
- Overall effect of MPRF to audit is low
  - Methods and processes stay the same
  - Audit effort is reduced as a result of mutual recognition
  - Auditor may be involved in the MPRF activities before the audit





# MPRF for scheme owners, regulators and policy makers

Daniele Catteddu, CSA

# MPRF – Stakeholders Engagement

## A use case scenario

- A foreign CSP holds a CSA STAR certification;
- A national organisation wants to understand which of their standard's national requirements are already covered by the CSA STAR certification;
- The CSP can focus on addressing the national requirements of the organisation that are not covered by CSA STAR;
- The standard owner wants to:
  - Identify missing requirements in their own standard and evolve own standard
  - Evaluate the interpretation of their own standard's requirements by the EU-SEC working groups during the comparison works
  - Ensure the soundness of the multiparty recognition activities

Photo by [Nikita Kachanovsky](#) on [Unsplash](#)



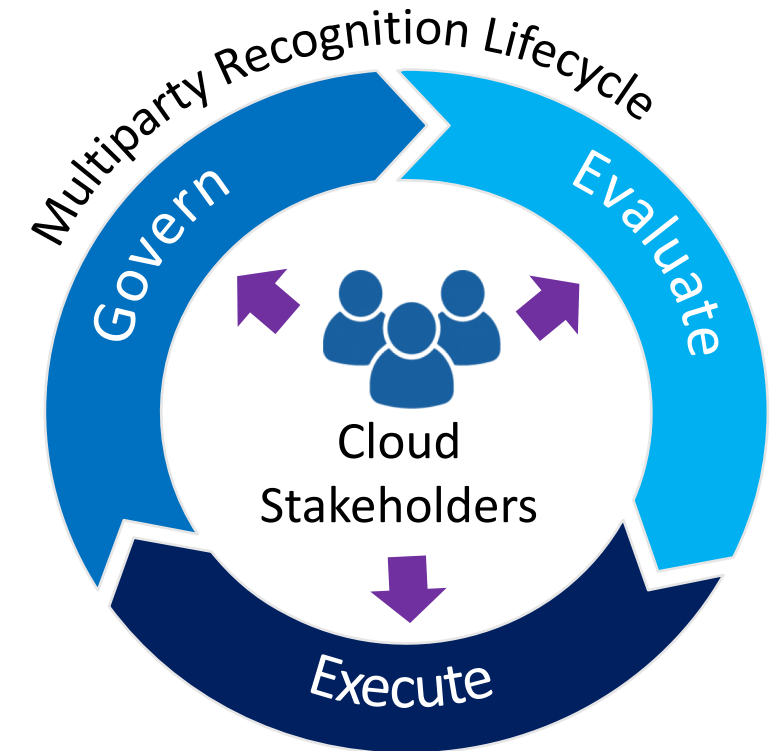
# MPRF – Stakeholders Engagement

MPRF value to standard owners and regulators

The MPRF **adds a considerable value** to scheme/standard owners:

- Invaluable contribution to technical committees
- Ensuring accurate and consistent future revisions and updates
- Ensuring alignment with industry requirements
- Ensuring international harmonization of requirements
- Reducing certification complexity and compliance fatigue
- Decreasing overall risk within the cloud ecosystem

} Increasing adoption



# MPRF – Stakeholders Engagement

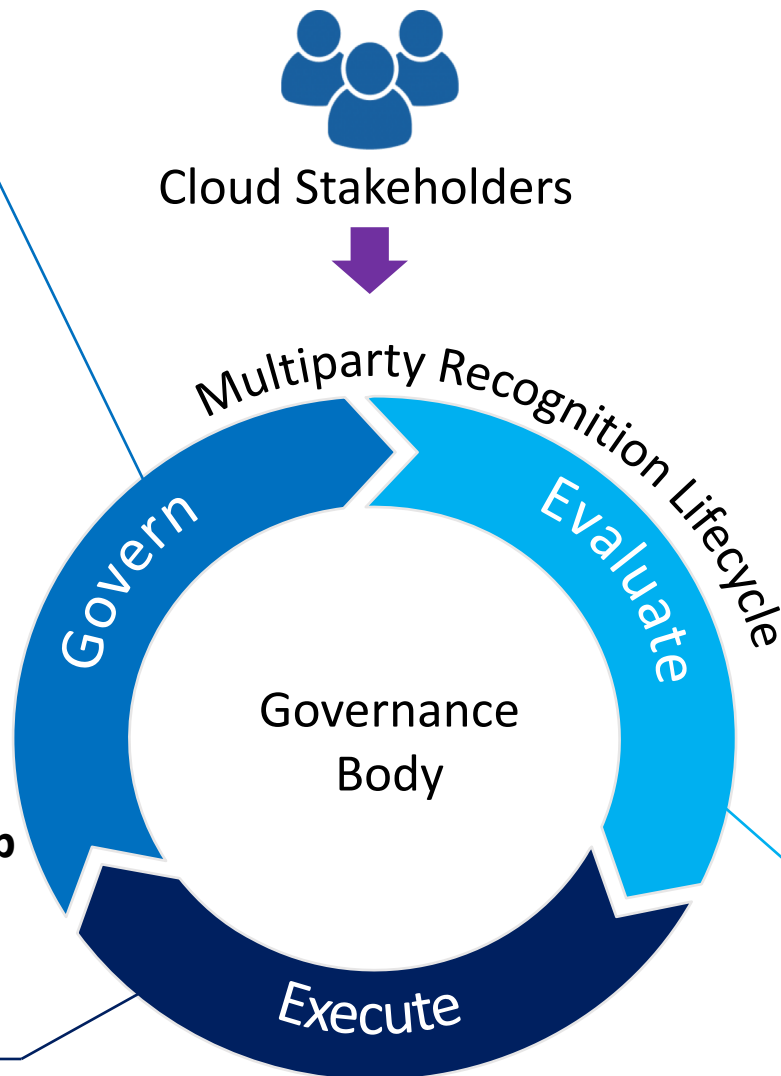
## Ways of interacting with the framework

### *Governance processes*

- **Complaint submission**
- **Inform of changes to certification standard**

- **New certification standard submission**
- **Request to join the Stakeholders Group**
- **Requirements comparison analysis support**
- **MPRF output product acquisition**

### *Operational processes*



Cloud Stakeholders

Multiparty Recognition Lifecycle

Governance  
Body

Govern

Evaluate

Execute

- **Support standard's eligibility evaluation**
- **Requirements comparison results validation**

### *Evaluation processes*



# MPRF – Cloud Stakeholders Engagement

## Roles and Responsibilities

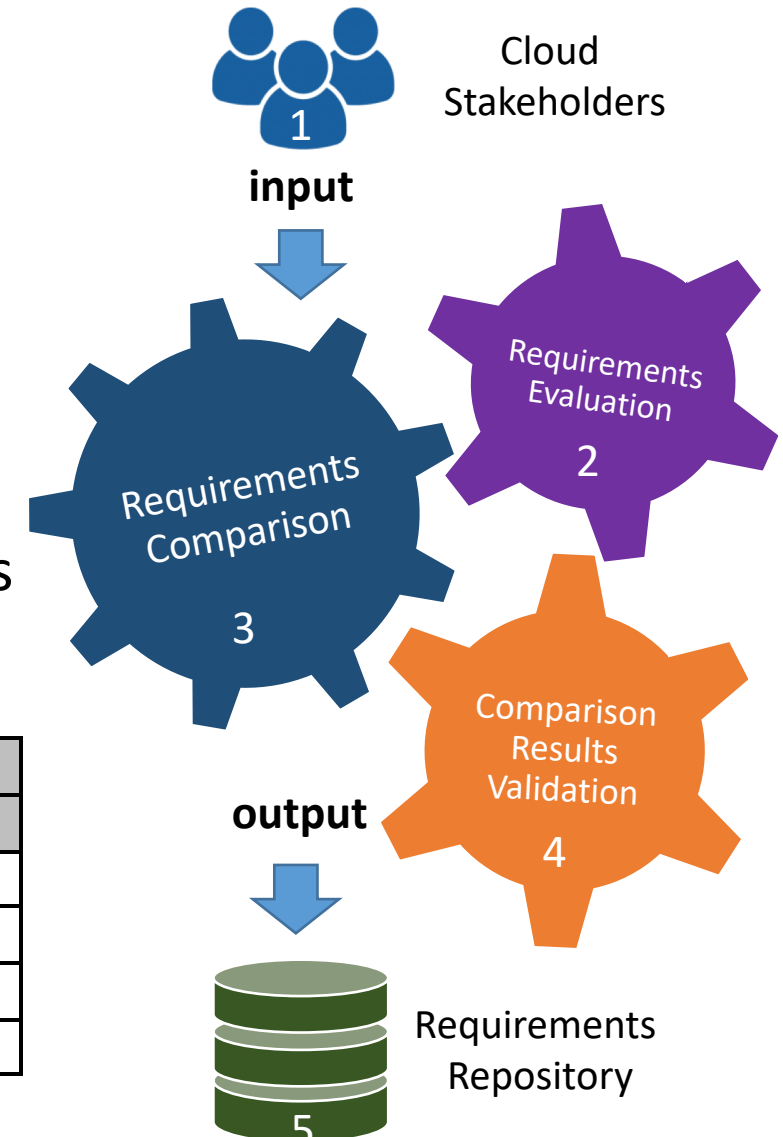
The Multiparty recognition framework is operationalised via 5 main processes:

1. Multiparty recognition request
2. Request assessment and acceptance
3. Requirements comparison analysis
4. Comparison results validation
5. Results output and dissemination

Stakeholders engage into each process with well defined roles and responsibilities (see RACI matrix)

Multiparty Recognition Framework Process		Activities				
		#1	#2	#3	#4	#5
Roles	EU-SEC Governing Body	R	A R	R	R	A R
	Standard/Framework Owners	A R	C	A R	A R	R
	Authorized Auditors	(A R)*	C	C	C	C I
	Auditees (the Cloud Service Providers)	-	-	C	C	C I

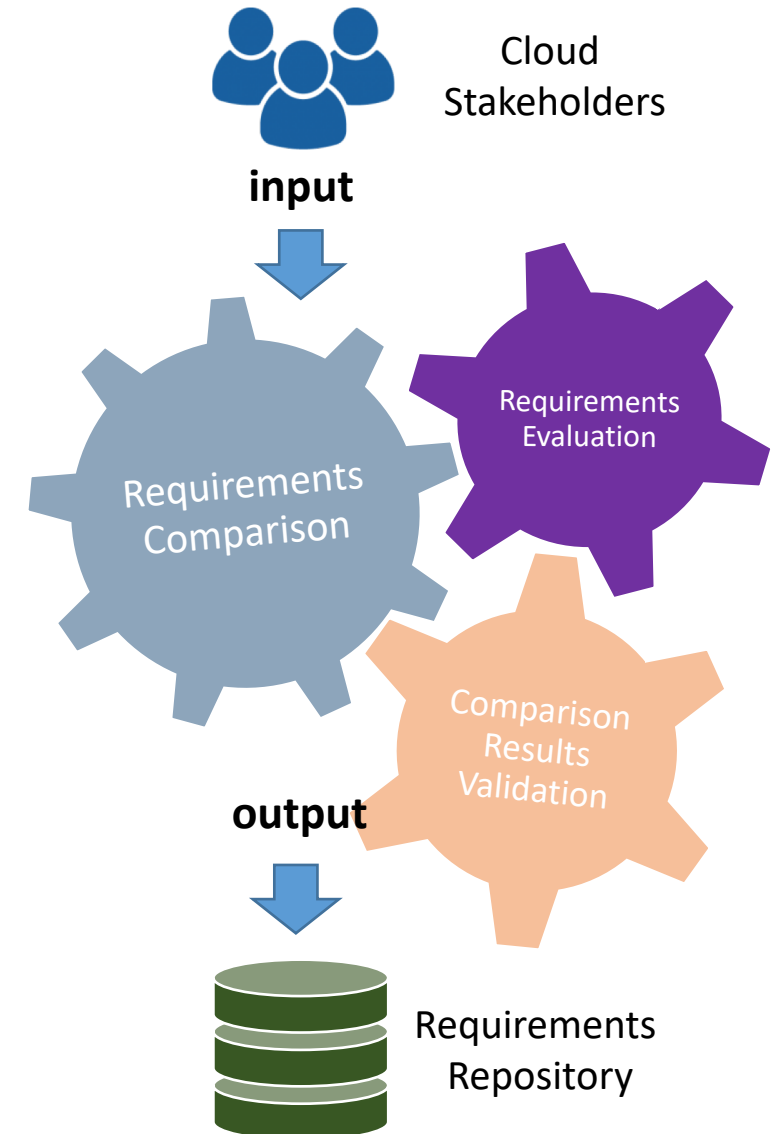
\*In case when Authorized Auditors present the Certification Body (e.g. ISO).





### Scheme/standard owners

- Consulting and supportive role in this process
- Participation ensures the quality and maturity of the imported schemes/standards

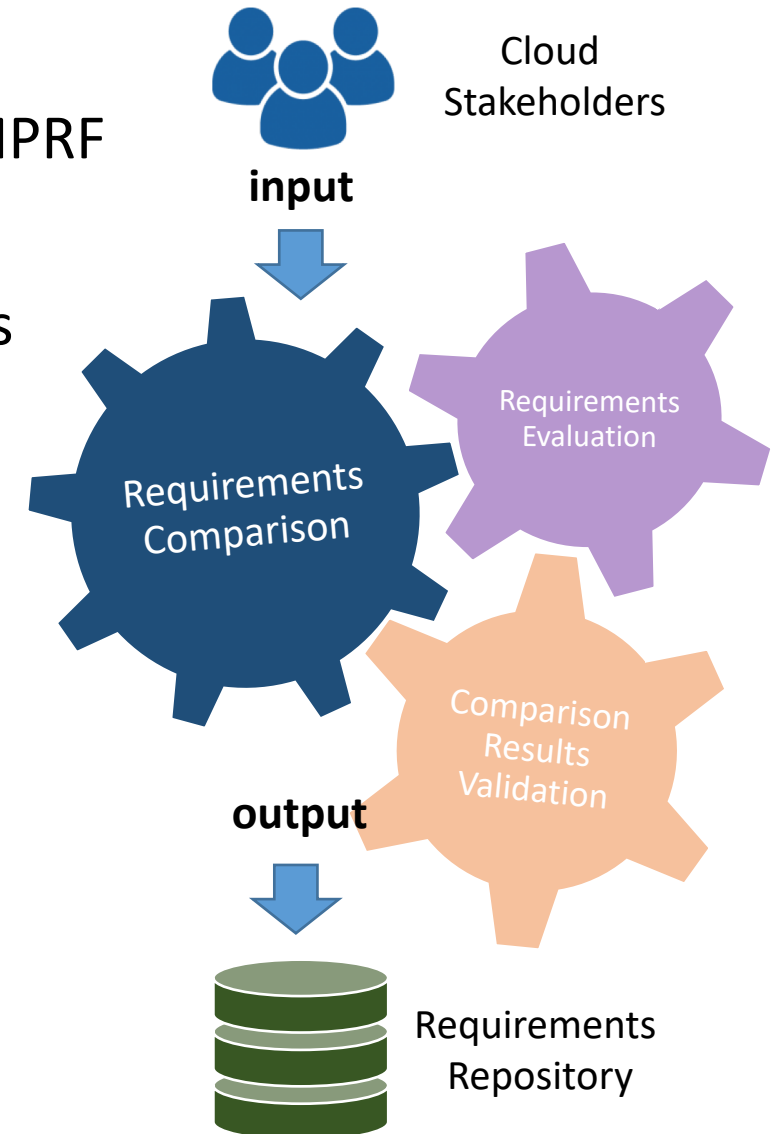


# MPRF – Stakeholders Engagement

## Requirements Comparison

### Scheme/standard owners

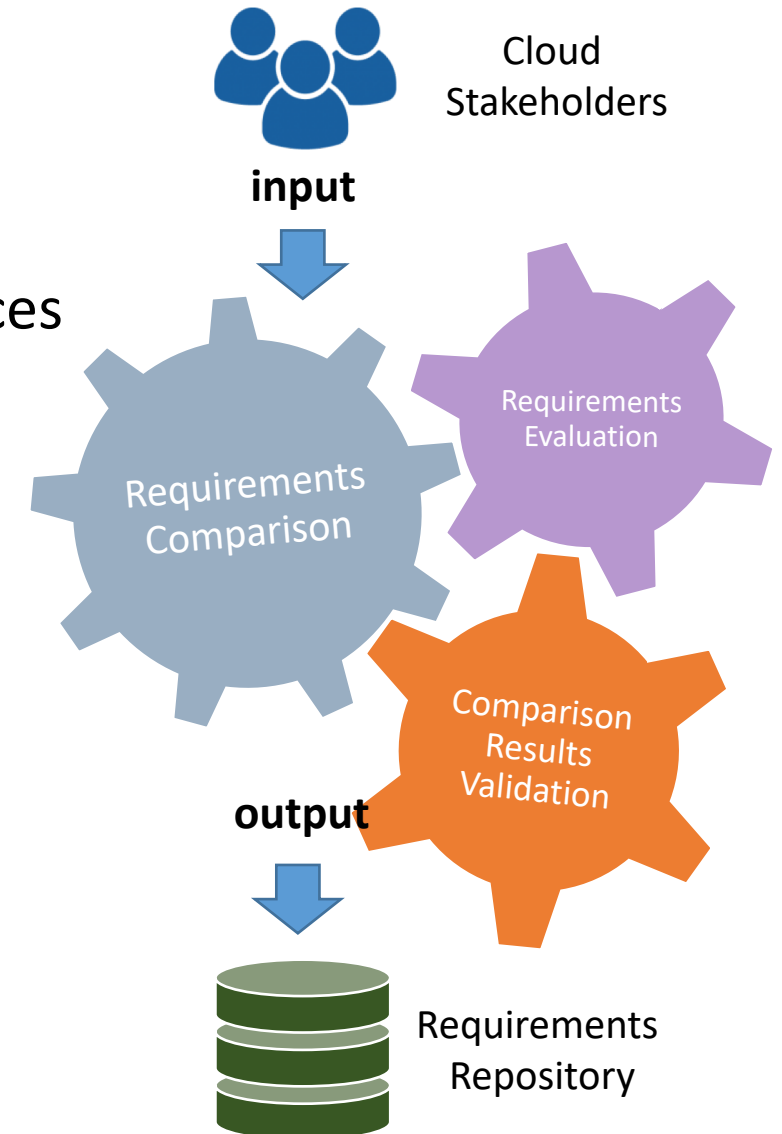
- Own standard is compared with other standards in the MPRF
- Contribute to the comparison\* works
- Provide valuable insight with regards to the requirements semantic interpretation



\* Includes activities of mappings, gap analysis and compensating controls

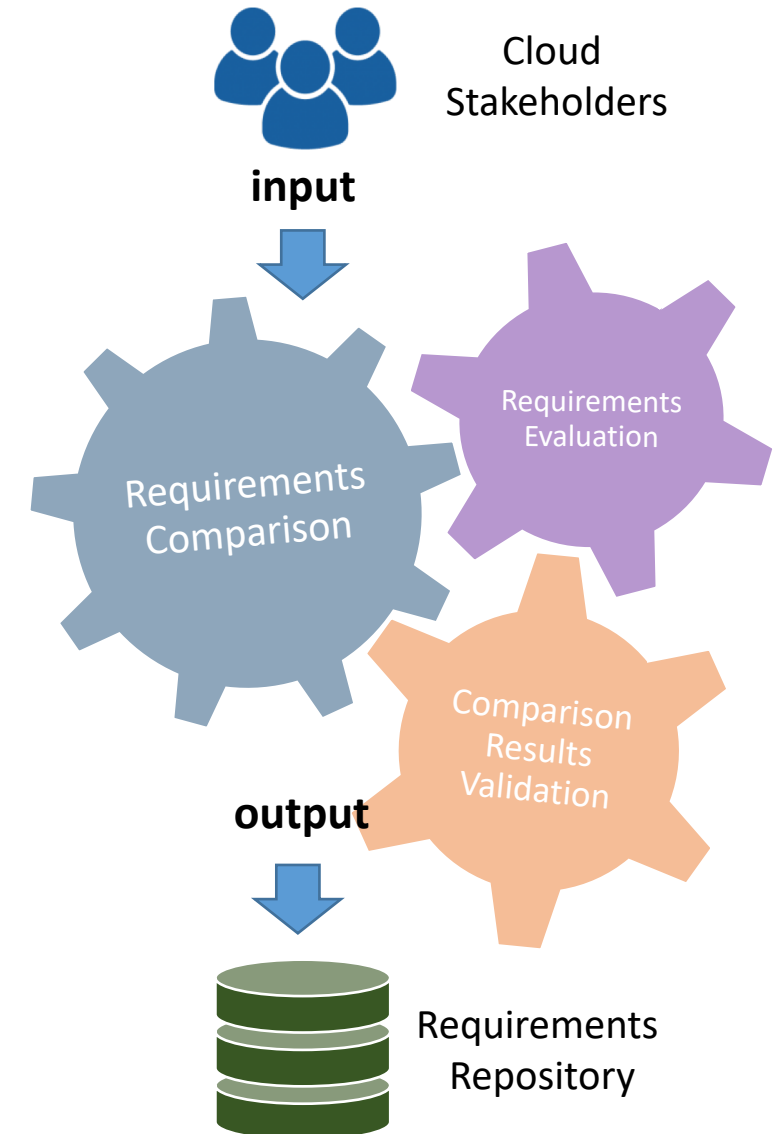
### Scheme/standard owners

- Collaborate with other stakeholders to validate for soundness the comparison results
- Establish agreements to recognise the semantic differences between the compared schemes/standards



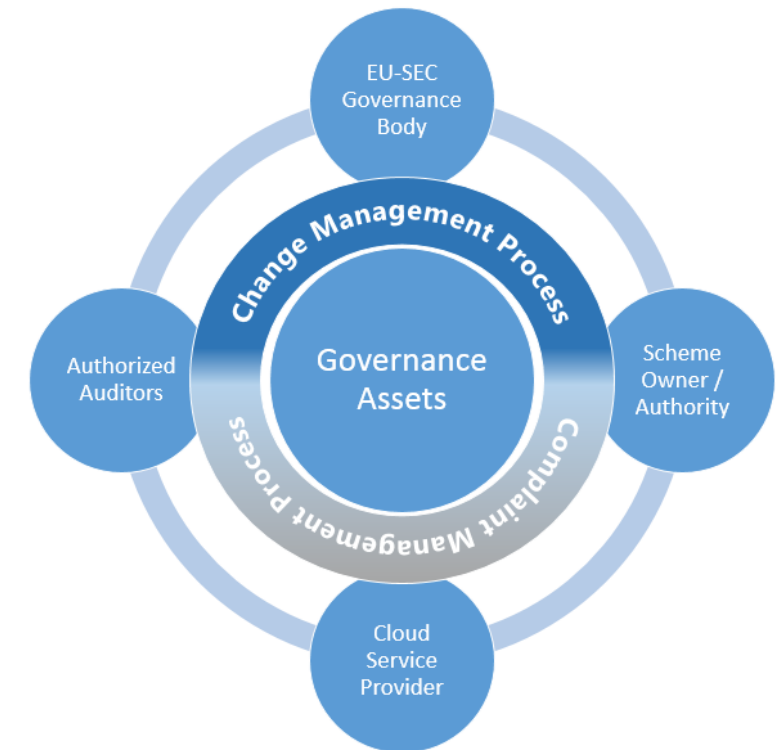
## Scheme/standard owners

- Granted access to the MPRF requirements & standards in the repository
- Enabled to keep track of differences between standards and their evolution
- Opportunity for regular review, identification of potentially missing requirements and updates



### **Scheme/standard owners**

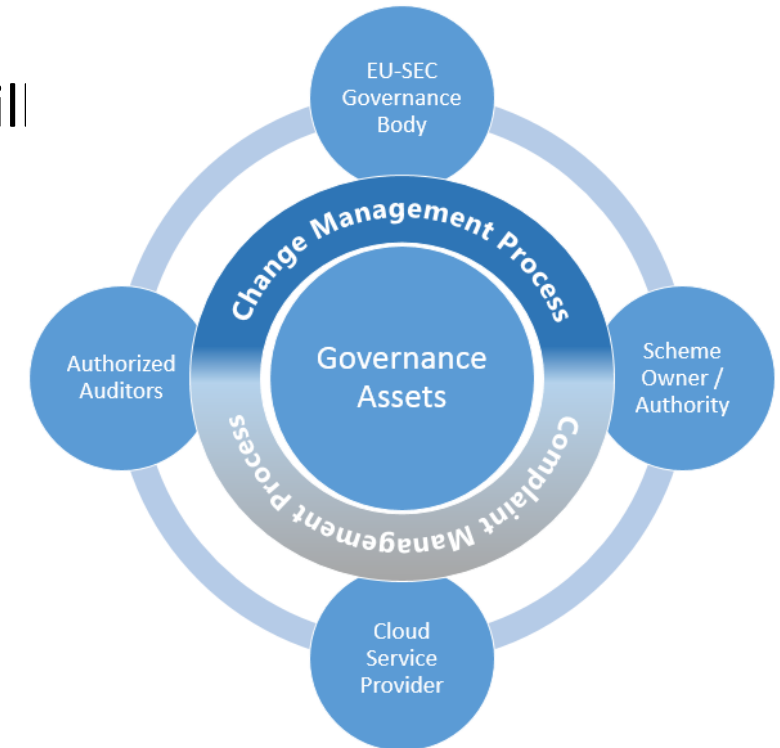
- Submit a complaint (e.g. objections to mapping and gap analysis results, etc.)





### Scheme/standard owners

- Informing the EU-SEC governance body when a scheme/standard is updated to a new version
- Triggering the MPRF change management process, which will initialize:
  - Requirements comparison
  - Comparison results validation
  - Integration of the new requirements to the requirements repository



### The Multiparty Recognition Framework:

- Offers significant synergies when a single management system is used to manage multiple requirements from more than one standard/framework
- Allows for using a single system for documentation, system governance, and definition of responsibilities for the the ongoing management of regulatory, legal compliance and information security
- Enables the:
  - Identification of overlapping requirements with other standards
  - Leverage of efficiencies reducing complexity
  - Reduction of costs
  - Decrease of risk
  - Greater visibility and assurance provided to the CSP organization

# Thank you for your attention!

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Contact: [contact@sec-cert.eu](mailto:contact@sec-cert.eu)

*Project Coordinator*

*Jürgen Großmann*

*Email: [juergen.grossmann@fokus.fraunhofer.de](mailto:juergen.grossmann@fokus.fraunhofer.de)*

*Fraunhofer FOKUS, Berlin, Germany*

*Phone: +49 (0)30 3463 7390*

