From Data Exchange to Digital Tracks

IT

10 DECEMBER 2025

Member States

Nearly all European IMs and ABs
are RNE Members

Exceptions:
IMs/ABs from Ireland, Northern Ireland,
and parts of the Balkans

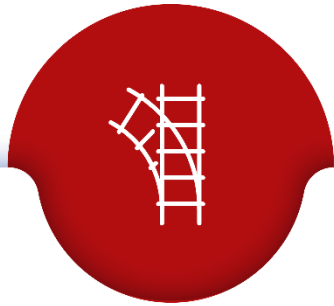# Members

Full Members

Associate Members

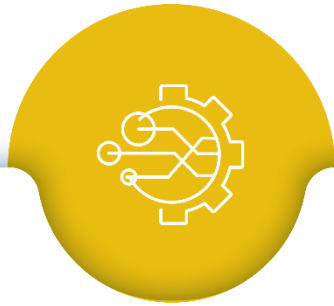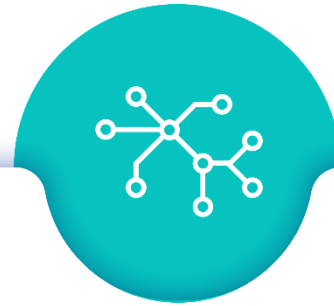# Project Portfolio

Capacity Management

Traffic Management

IT

Corridor Management

Legal Matters & Sales

IT Landscape - Europe currently…

From a planning perspective:

- Isolated with a national focus, lack of strategic planning
- Cooperation 'islands'
- Tedious planning meetings with limited scalability

From an allocation perspective:

- Varying levels of maturity and digitalization
- Request country by country for a single train run
- Tedious coordination for changes

Traffic Management:

- Common European System (tis.rne.eu)
- National systems and rules

Europe with Digital Capacity Management

Planning

- Various tools support strategic decisions
- Harmonized international traffic flows
- Universal European processes

Allocation

- Modern, digital solutions for capacity booking
- Single-place solution for international requests
- Up-to-date and traceable change management

Traffic Management:

- Common European System (tis.rne.eu)
- Including all information related to train operation in one system
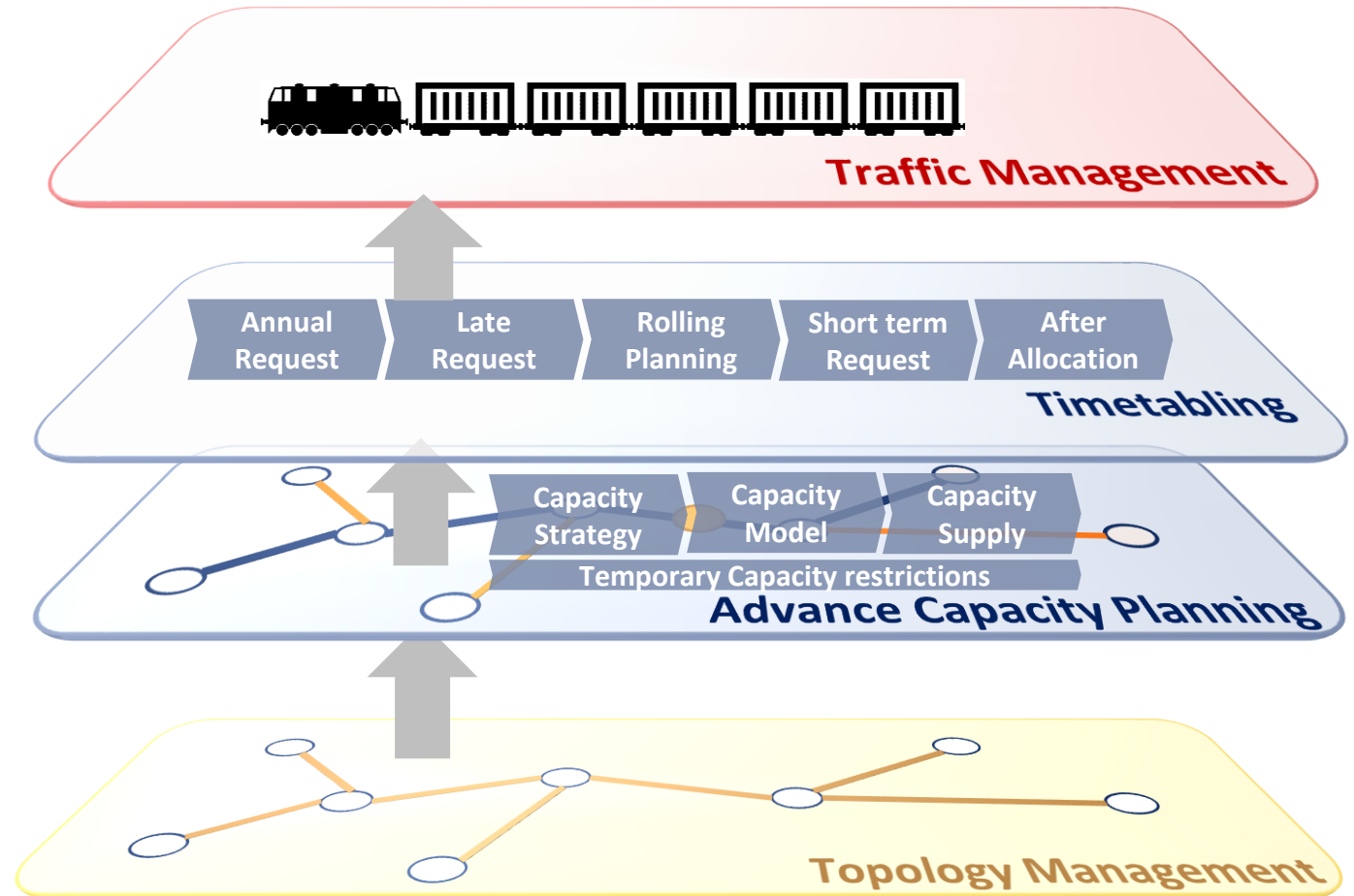- Reducing national rules and procedures

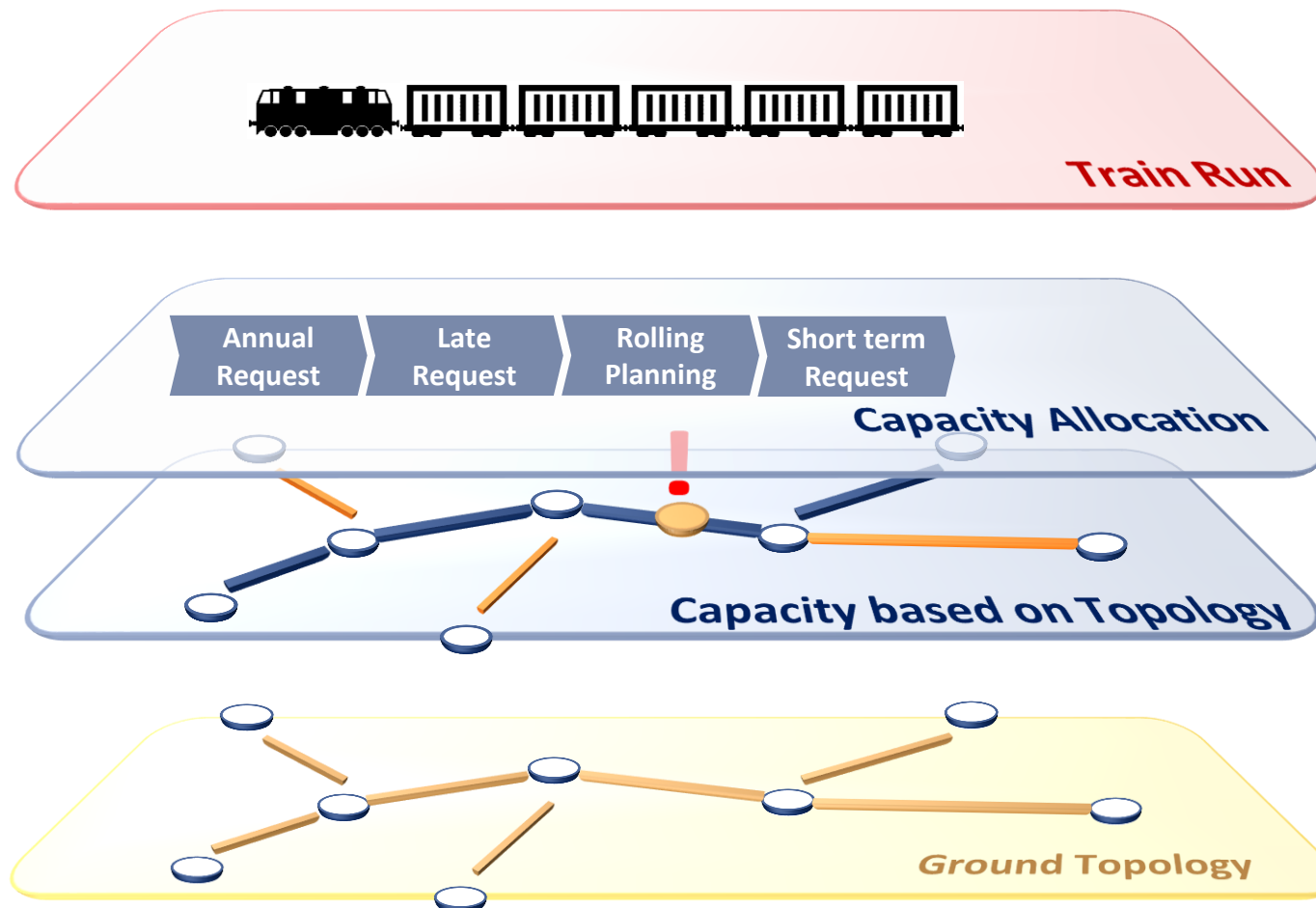# Main Regulations/TSI to be implemented by the Sector/NC
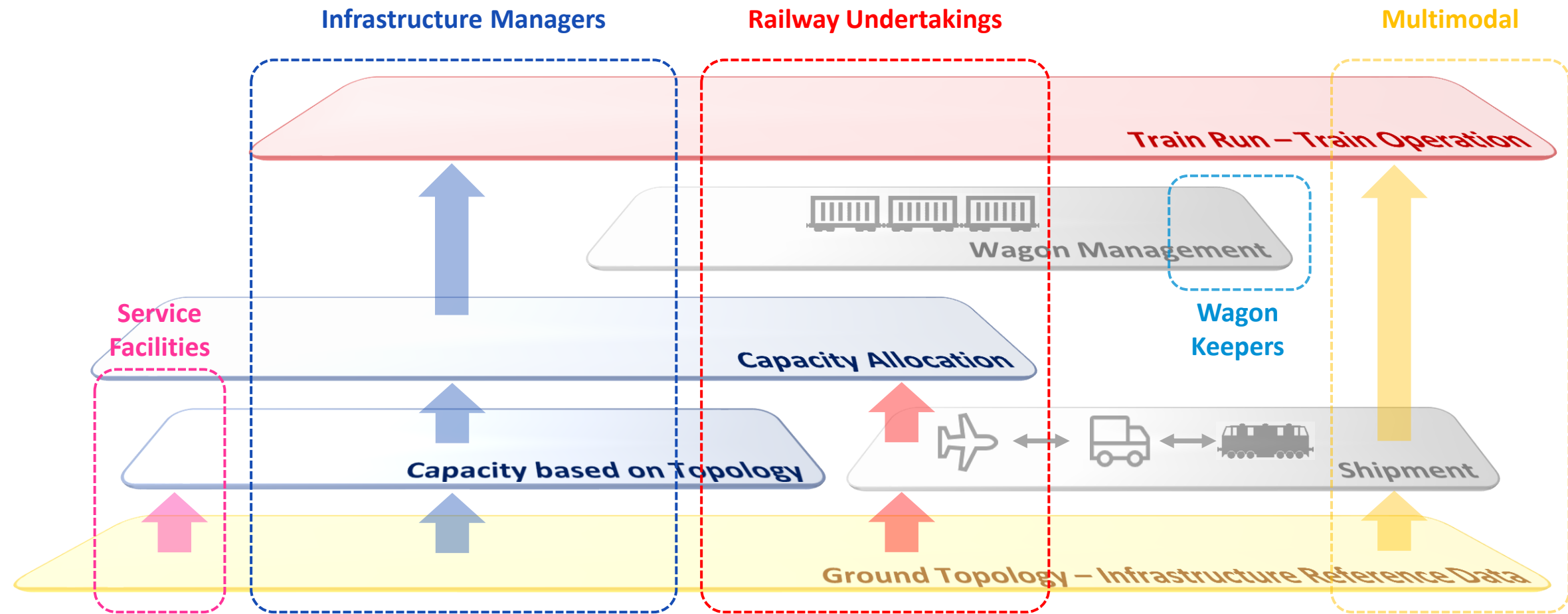
Telematics TSI

🤝

Capacity Regulation

Digital Implementation Strategy by RNE/IMs – CR & TSI

RNE IT Strategy
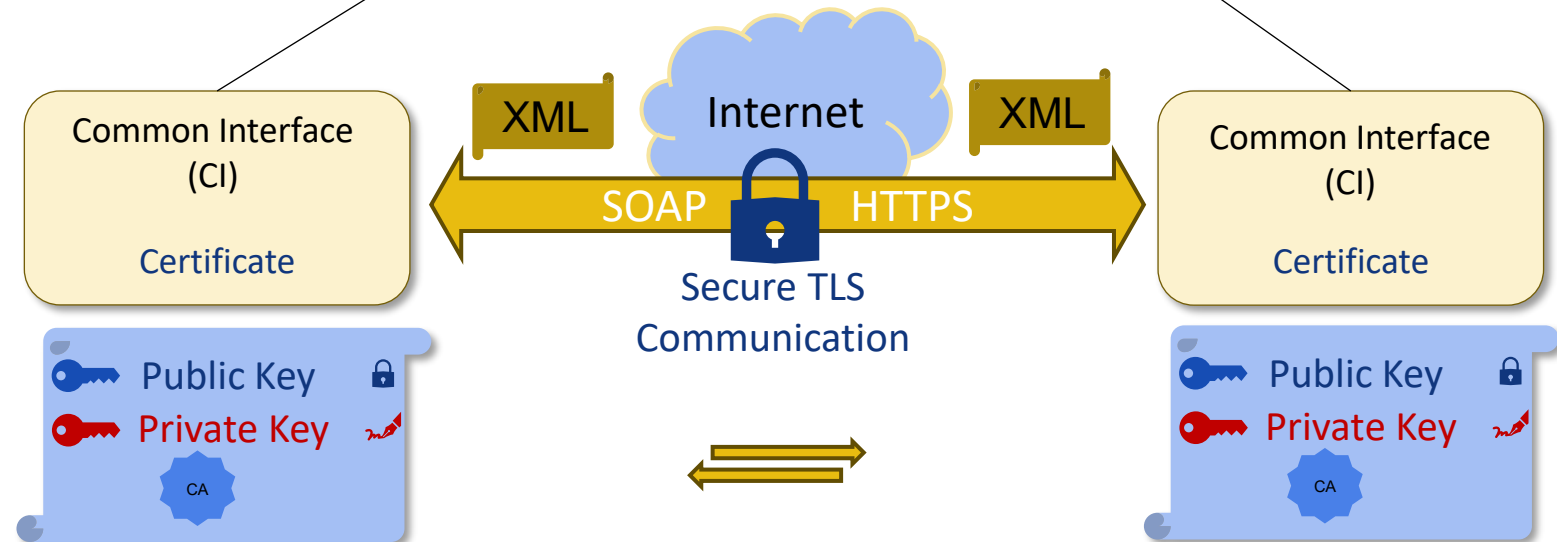
Data exchange in the sector

CI – TLS Communication Between CIs

Secure Communication Channels for Railway Common Interfaces

Key Security Features:

- Establishes secure SSL/TLS communication channels between Common Interface implementations
- Certificate-based authentication ensures only legitimate CIs can connect to the network
- Mutual TLS authentication verifies identity of both communicating parties
- All certificates are issued and managed by RNE to ensure trust across the rail network

- Certificate Exchange
- Mutual Authentication
- Secure Communication
- Protects across intermediaries

Common Interface (CI)

Certificate

XML

Internet

XML

SOAP   HTTPS

Secure TLS Communication

Common Interface (CI)

Certificate

Public Key
Private Key
CA

Public Key
Private Key
CA

CI Security: Encryption & TLS Communication

Ensuring Secure Communication and Data Protection in Common Interface (CI) According to ERA
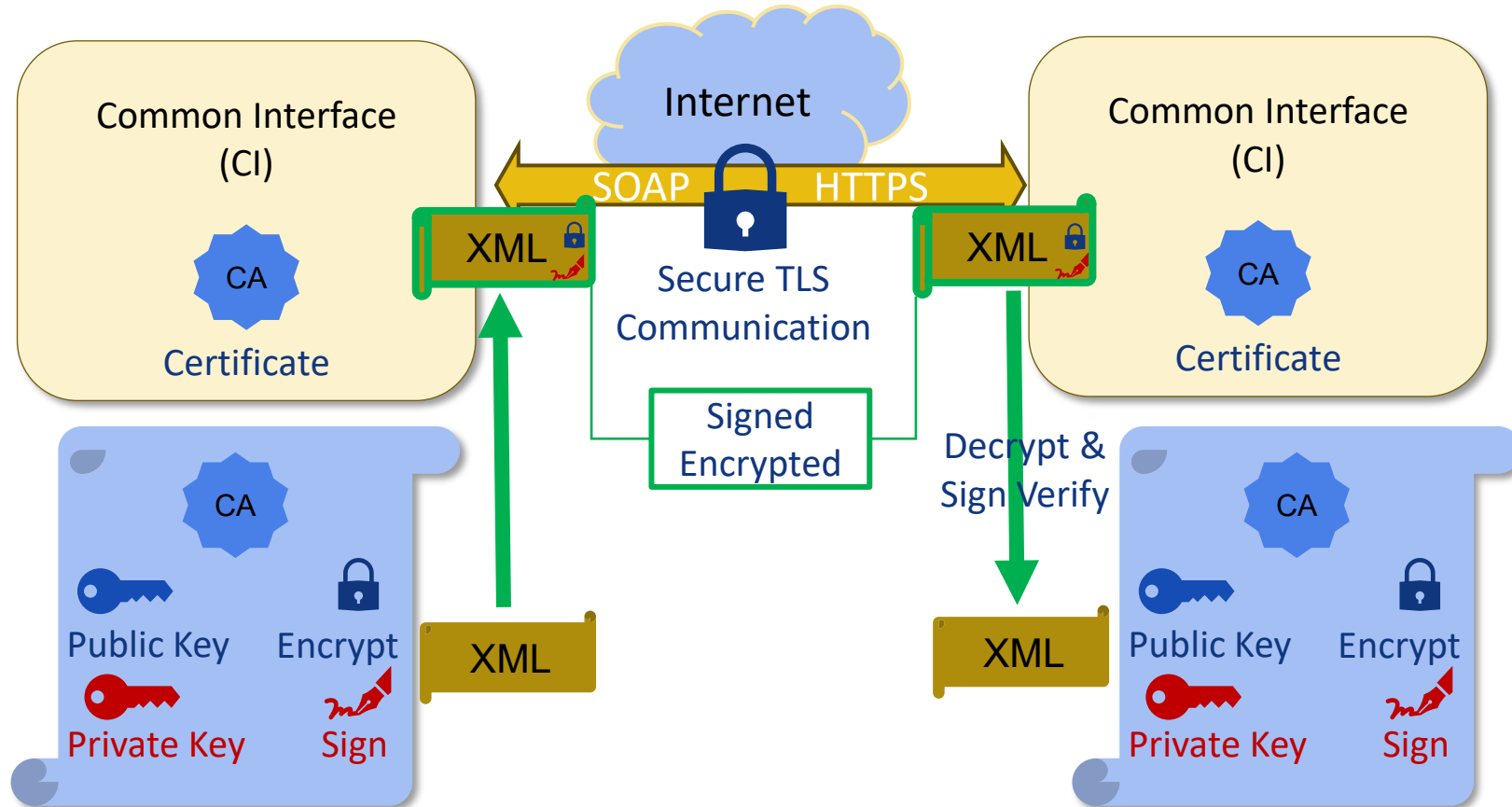
Key Security Features

- The CI signs outbound messages according to the provisions of ERA Technical Document 104

- Uses a private key derived from the CI's certificate for message signing

- Encrypts messages for confidentiality, ensuring only intended recipients can access

- Standardized process enables interoperability between different railway CI implementations

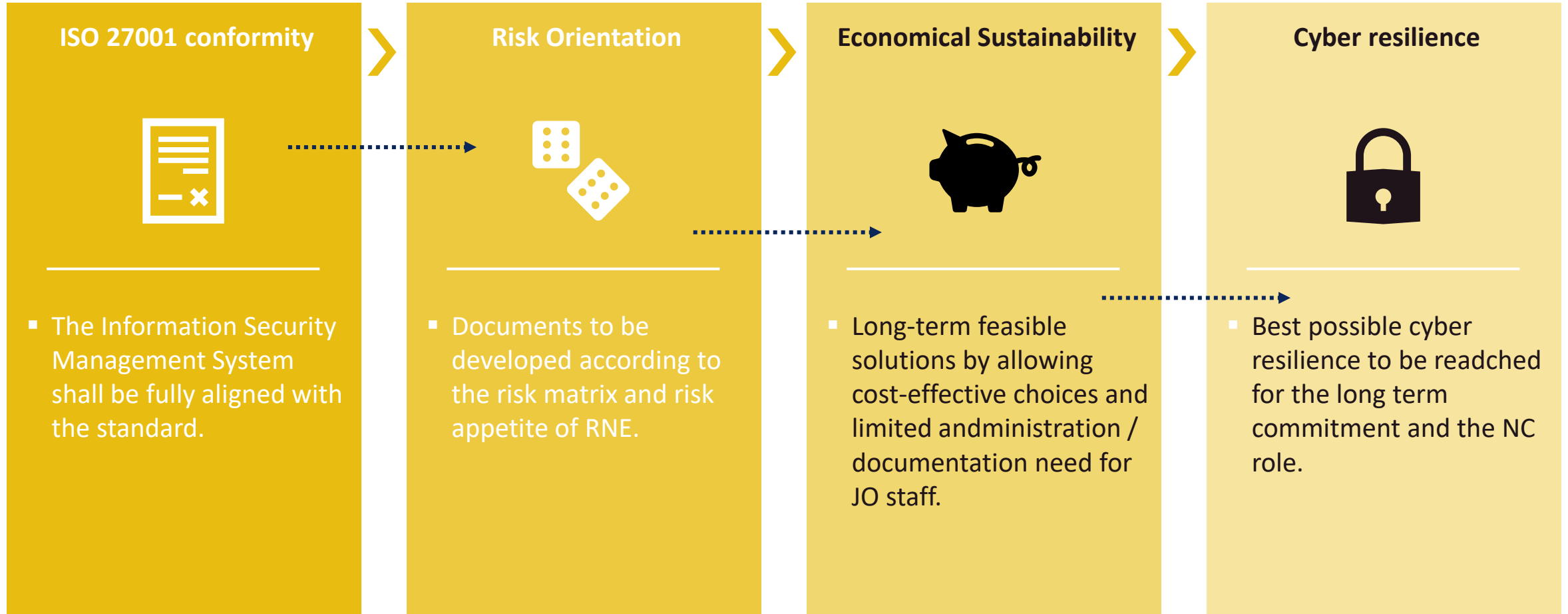- RNE acts as Certificate Authority for CI
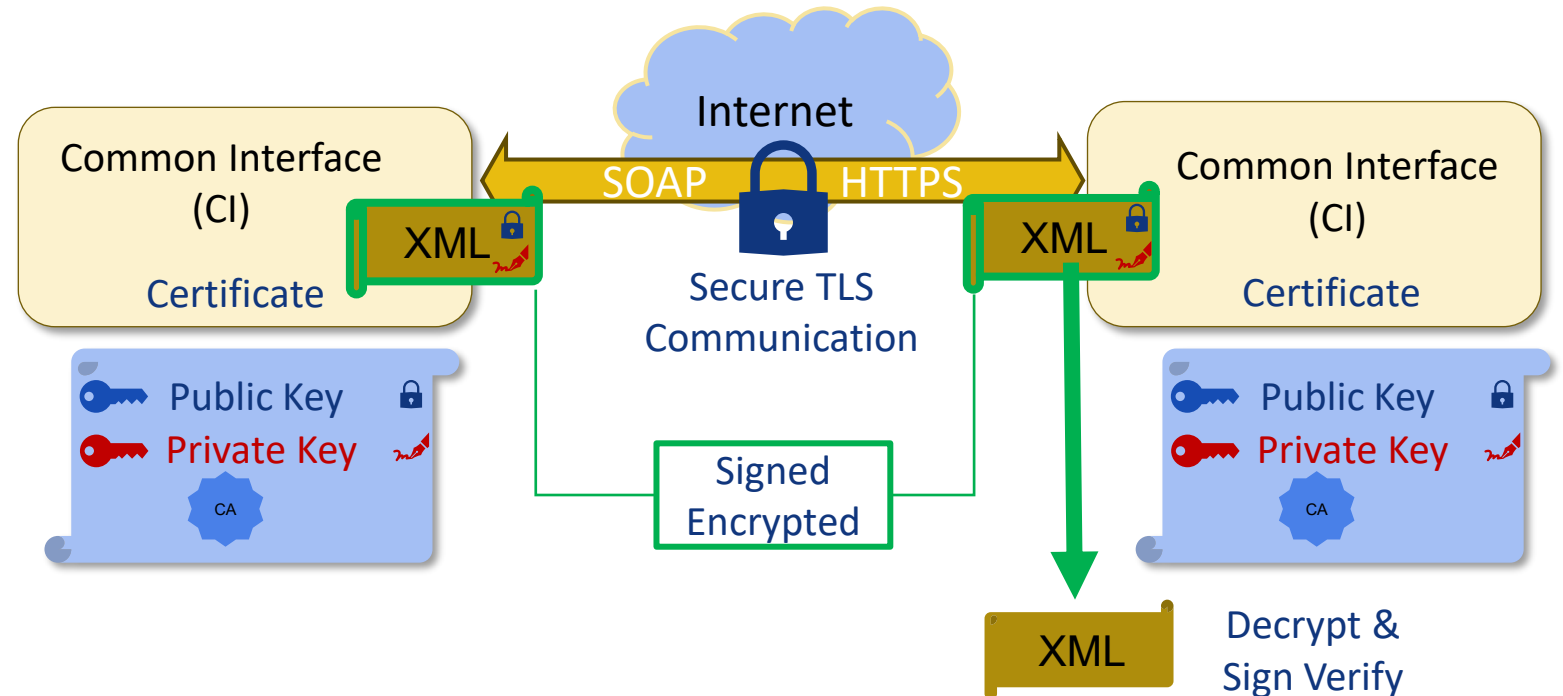
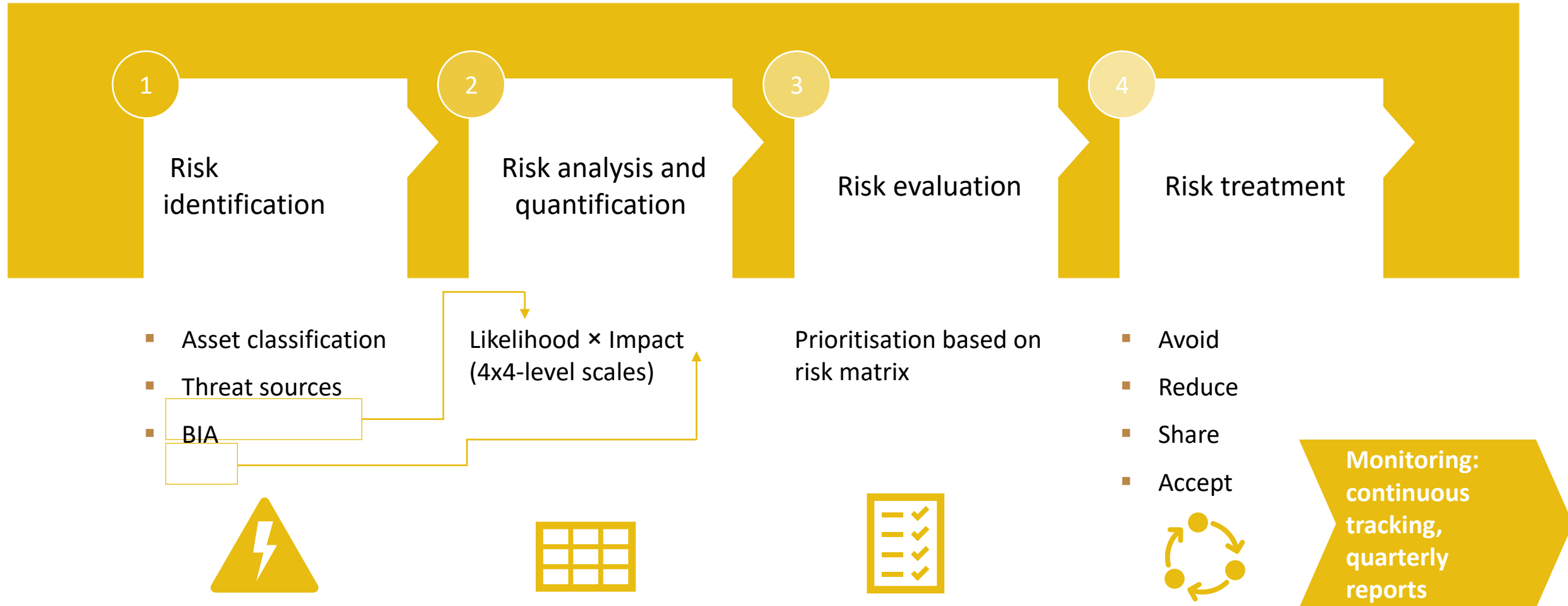# CI Application-Level Encryption & Decryption

Security Benefits

- Integrity: Prevents message tampering
- Authenticity: Verifies message source
- Confidentiality: Protects sensitive data
- Non-repudiation: Sender cannot deny sending

Main pillars of the Information Security System @ RNE

ISO 27001 conformity

- The Information Security Management System shall be fully aligned with the standard.

Risk Orientation

- Documents to be developed according to the risk matrix and risk appetite of RNE.

Economical Sustainability

- Long-term feasible solutions by allowing cost-effective choices and limited andministration / documentation need for JO staff.

Cyber resilience

- Best possible cyber resilience to be readched for the long term commitment and the NC role.

Risk treatment process

1 Risk identification

2 Risk analysis and quantification

3 Risk evaluation

4 Risk treatment

- Asset classification
- Threat sources
- BIA

Likelihood × Impact (4x4-level scales)

Prioritisation based on risk matrix

- Avoid
- Reduce
- Share
- Accept

Monitoring: continuous tracking, quarterly reports

ISO 27001 – Project – Risk Assessment

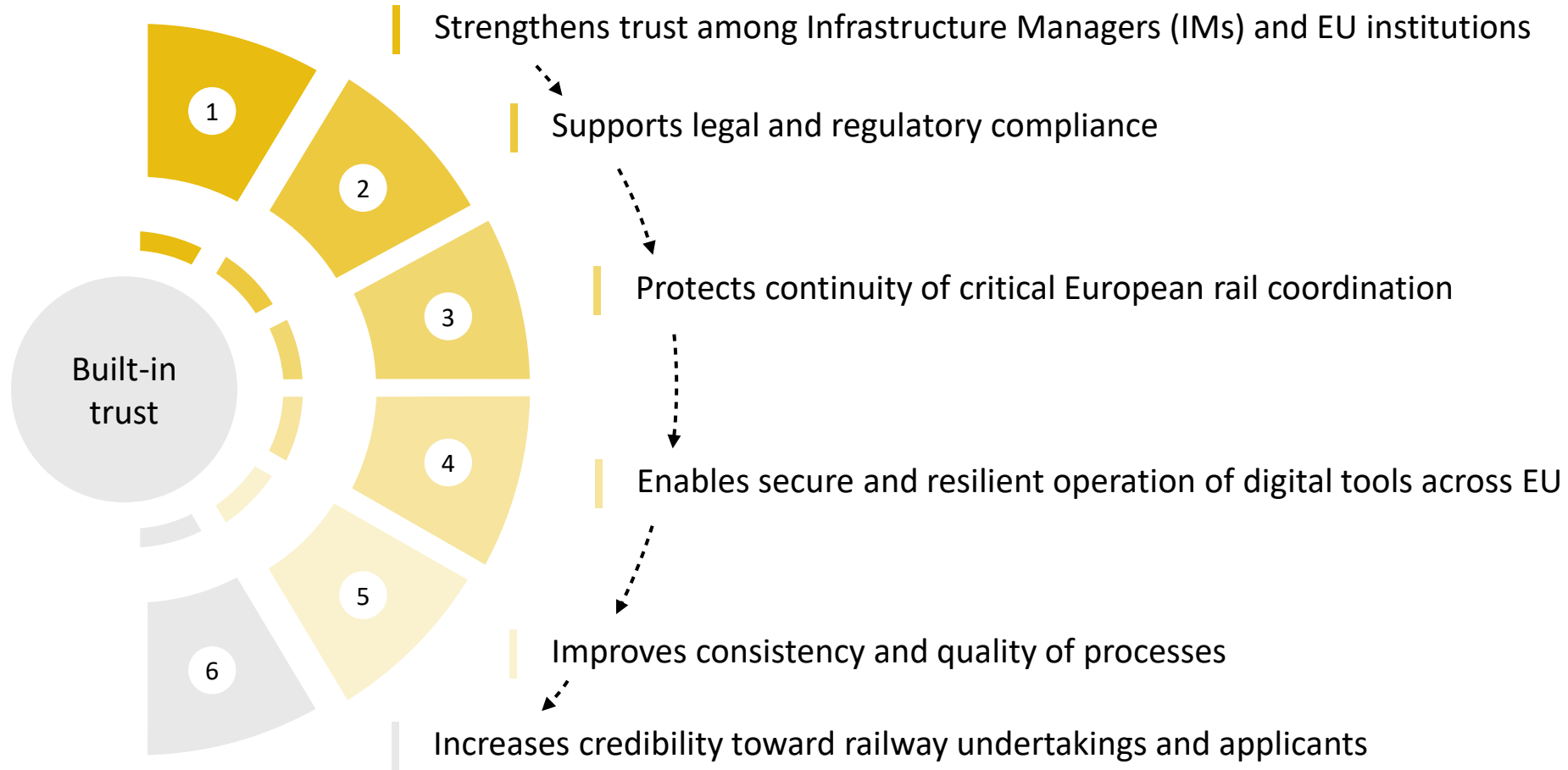| L	Likelihood
0	n/a; impossible
1	every 5 years / extremely rare
2	once a year / rare or unlikely
3	monthly / sometimes or likely
4	daily / frequently or very likely

I	Impact
0	EUR < 10 k
1	EUR 10 k - EUR 250 k
2	EUR 250 k - EUR 1 million
3	EUR 1 million – 4 million
4	EUR > 4 million

$$R = L \times I$$

Why Information Security Matters for RNE?

Strengthens trust among Infrastructure Managers (IMs) and EU institutions

Supports legal and regulatory compliance

Protects continuity of critical European rail coordination

Enables secure and resilient operation of digital tools across EU

Improves consistency and quality of processes

Increases credibility toward railway undertakings and applicants

Built-in trust

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2
3
4
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We will keep you informed...

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