



EU-RAIL SYSTEM PILLAR

# Initial Risk Assessment

Version: 1.1



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## Document History

Version	Date	Description	Status
1.1	23-MAR-2026	Error correction and additional guidance for version 1.0	released
1.0	20-FEB-2025	Initial public release	released

## Maintenance


After release, this document immediately enters the maintenance phase. Maintenance includes error corrections and general improvement of the document. Please send your change requests to the following email address:

[cybersecurity.review@ertms.be](mailto:cybersecurity.review@ertms.be)

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## 2 SuC Description

The definition of the system under consideration (SuC) can be taken from the system description (  System Description )

## 3 Threat Catalogue

The following threat catalogue is used in this version of the specifications: [SP-SEC-ThreatCat]

A future version of this specification can include an updated threat catalogue harmonizing various existing threat catalogues (BSI, ANSSI, MITRE,...).

## 4 Risk Impact Assessment Method

The initial risk assessment is based on the impact assessment method. That method evaluates the worst case impact if an attack is successful. The impact is assessed based on different criteria. These criteria are:

- Confidentiality
- Integrity
- Availability
- Non Repudiation
- Authenticity

Each assessment criteria is evaluated based on different categories of impact. Based on the impact, the level (low - very high) is defined. In the evaluation always the maximum value of the evaluated categories is chosen.

The definitions are listed in the following table.

<b>Category / Protection class</b>	<b>Financial Impact</b>	<b>Privacy violations</b>	<b>Violation of laws, regulations and rules</b>	<b>Disruption of business activity</b>	<b>Loss of reputation</b>	<b>Health damage</b>
Definition	Loss of revenue, damages, additional personnel costs or investments, material damage, etc.	Handling personal data of customers, employees and suppliers on the basis of the applicable data protection laws and the guidelines applicable thereto. It is strongly recommended to coordinate the assessment with the relevant data protection organisation.	For example: Group guidelines, company agreements, service regulations, legal ordinances, customs regulations, etc.	Delayed implementation, late delivery, additional expenditure, inadequate service, etc.	Negative reporting, loss of confidence among customers and business partners, etc.	Injuries, fatalities of humans
Low	No or only minor financial damage. Financial thresholds are defined by the CISO or the CEO.	An impairment of the right of self-determination with regard to information has no effect on the right of personality of the person concerned. e.g. generally accessible data, address data within the scope of an	The risk occurrence comprises a single issue with politically/legally relevant sub-aspects. Note: The following aspects may be relevant for the assessment: contractual agreements or EU-GDPR	Increased constraints on operations with acceptable impact on capabilities/processes. Note: The following aspect may be relevant in the assessment: - End customer service provision - public supply	Country-wide and supra-regional (neighboring countries) critical reporting of sub-areas/individuals of the company. Note: The following aspects may be	Individuals may suffer minor injuries if the system fails..

		employment contract or other contractual relationship, personnel number.	right to personal self-determination and integrity.		relevant when assessing reputation: Employee reputation, employer reputation, strategic target achievement at risk, loss of customers or market share / political trust.	
Middle	Tolerable financial damage. The financial thresholds are defined by the CISO or the CEO.	An impairment of the right to informational self-determination has a minor impact on the personal rights of the data subject. e.g. generally accessible data, address data within the scope of an employment contract or other contractual relationship, personnel number.	The occurrence of risk comprises a single issue that leads to a contractual, legal or political audit with probable consequences (e.g., penalties). Note: The following aspects may be relevant for the assessment: contractual agreements or EU-GDPR right to personal	Increased constraints on operations with acceptable impact on capabilities/ processes. Note: The following aspect may be relevant in the assessment: - End customer service provision - public supply	Country-wide and supra-regional (neighboring countries) critical reporting of sub-areas/ individuals of the company. Note: The following aspects may be relevant when assessing reputation: Employee reputation, employer reputation,	If the system fails, individuals may suffer serious injuries. As a rule, inpatient hospitalization is required.

<b>Category / Protection class</b>	<b>Financial Impact</b>	<b>Privacy violations</b>	<b>Violation of laws, regulations and rules</b>	<b>Disruption of business activity</b>	<b>Loss of reputation</b>	<b>Health damage</b>
Definition	Loss of revenue, damages, additional personnel costs or investments, material damage, etc.	Handling personal data of customers, employees and suppliers on the basis of the applicable data protection laws and the guidelines applicable thereto. It is strongly recommended to coordinate the assessment with the relevant data protection organisation.	For example: Group guidelines, company agreements, service regulations, legal ordinances, customs regulations, etc.	Delayed implementation, late delivery, additional expenditure, inadequate service, etc.	Negative reporting, loss of confidence among customers and business partners, etc.	Injuries, fatalities of humans
			self-determination and integrity.		strategic target achievement at risk, loss of customers or market share / political trust.	
High	High financial damage. Financial thresholds are defined by the CISO	An impairment of the right to informational self-determination has a	The occurrence of risk comprises a situation/ series of situations	Extensive constraints in operative operations with high impact on capabilities/ processes or	National/ international critical reporting. The reputation of the	If the system fails, many people can suffer

Category / Protection class	Financial Impact	Privacy violations	Violation of laws, regulations and rules	Disruption of business activity	Loss of reputation	Health damage
Definition	Loss of revenue, damages, additional personnel costs or investments, material damage, etc.	Handling personal data of customers, employees and suppliers on the basis of the applicable data protection laws and the guidelines applicable thereto. It is strongly recommended to coordinate the assessment with the relevant data protection organisation.	For example: Group guidelines, company agreements, service regulations, legal ordinances, customs regulations, etc.	Delayed implementation, late delivery, additional expenditure, inadequate service, etc.	Negative reporting, loss of confidence among customers and business partners, etc.	Injuries, fatalities of humans
	or the CEO.	significant impact on the personal rights of the person concerned or is a criminal offense. e.g. customer or employee profiles, qualification or scoring data, wage or salary data, bank data, health data, political and	that have contractual, legal or political consequences for parts of the management. Note: The following aspects may be relevant for the assessment: contractual agreements or EU-GDPR	critical facilities. Note: The following aspect may be relevant in the assessment: - End-user service delivery - public supply	operator is at risk, market shares and new business are at risk. Note: The following aspects may be relevant when assessing reputation: Employee reputation, employer	serious injuries. As a rule, inpatient hospitalization is required. Individuals may also be killed by the failure of the system.

<b>Category / Protection class</b>	<b>Financial Impact</b>	<b>Privacy violations</b>	<b>Violation of laws, regulations and rules</b>	<b>Disruption of business activity</b>	<b>Loss of reputation</b>	<b>Health damage</b>
Definition	Loss of revenue, damages, additional personnel costs or investments, material damage, etc.	Handling personal data of customers, employees and suppliers on the basis of the applicable data protection laws and the guidelines applicable thereto. It is strongly recommended to coordinate the assessment with the relevant data protection organisation.	For example: Group guidelines, company agreements, service regulations, legal ordinances, customs regulations, etc.	Delayed implementation, late delivery, additional expenditure, inadequate service, etc.	Negative reporting, loss of confidence among customers and business partners, etc.	Injuries, fatalities of humans
		religious convictions, video surveillance and recording, telecommunication service data at the provider.	right to personal self-determination and integrity.		reputation, strategic goal achievement at risk, customer or market share loss / political trust.	
Very High	Existence-threatening damage. The financial threshold values are defined by	There is a high need for protection and, moreover, the processing of personal data	The occurrence of risk comprises a series of circumstances that lead	Large-scale cessation of operations. Capabilities/ processes have been interrupted or	International negative reporting, image of the company damaged	Fatalities and/or multiple severe injuries

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	the CISO or the CEO.	is an existential business purpose of the company. An impairment of the right to informational self-determination can threaten the existence of the company. For example, personal data that is subject	to critical contractual, legal and political consequences for the entire management. Note: The following aspects may be relevant for the assessment: contractual agreements or EU-GDPR	are operating below the legal thresholds for critical facilities. Note: The following aspect may be relevant in the assessment: - End customer service provision - Public supply	for the long term with all stakeholders. Note: The following aspects may be relevant when assessing reputation: Employee reputation, employer reputation, strategic	

<b>Category / Protection class</b>	<b>Financial Impact</b>	<b>Privacy violations</b>	<b>Violation of laws, regulations and rules</b>	<b>Disruption of business activity</b>	<b>Loss of reputation</b>	<b>Health damage</b>
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		to professional secrecy or bank or credit card accounts at the call centre.	right to personal self-determination and integrity.		goal achievement at risk, loss of customers or market share / political trust.	

## 5 Initial Risk Assessment

The following initial risk assessment is documented based on the definitions in chapter 2 and 4.

Requ / System Name	Secure Component	SCS-STs	SCS-PKI	SCS-UAS	SCS-LOG	SCS-BKP	SCS-IAM	SCS-NAC	SCS-DNS
System ID	1	2	3	4	5	6	7	8	9
Function	Safety related function in CCS according to SuC description	Provide Time for synchronised time	Certificate Management	Single sign on, authentication	collecting and evaluating logs	back up of software and configs, centrally	Identity and access management	Network authentication	Domain name system
relevant for safety	yes	yes	no	no	no	no	no	no	no
Confidentiality	not relevant	not relevant	very high	very high	very high	not relevant	high	low	low
Integrity	very high	high	very high	very high	very high	very high	very high	very high	very high
Availability	high	middle	middle	high	high	very high	very high	very high	very high
Non-Rep	middle	middle	middle	middle	middle	middle	very high	high	high
Authenticity	very high	middle	nr	high	high	high	very high	very high	very high
Explanation	If a secure component is successfully manipulated fatalities and/or multiple severe	Time drift can be used for attacks . Still permanent availability is	root is critical	stores all user information. compromising gives access to all system	single source of truth for security status. losing the data or manipu	loss of software and config in central storage is catastrophe, if roll-	single source of access rights for human users and allowed assets	single source for network access	single source for network identifiers

Requ / System Name	Secure Component	SCS-STs	SCS-PKI	SCS-UAS	SCS-LOG	SCS-BKP	SCS-IAM	SCS-NAC	SCS-DNS
	injuries can occur.	not required as internal clocks manage minimal time drift.		s using UAE	lotion makes monitoring "blind"	back or new set-up (after incident) is required.			
Comment		relevant to safety based on safety definition							

The results are used as input to the detailed risk assessment and lay the basis for the zoning of the SuC.