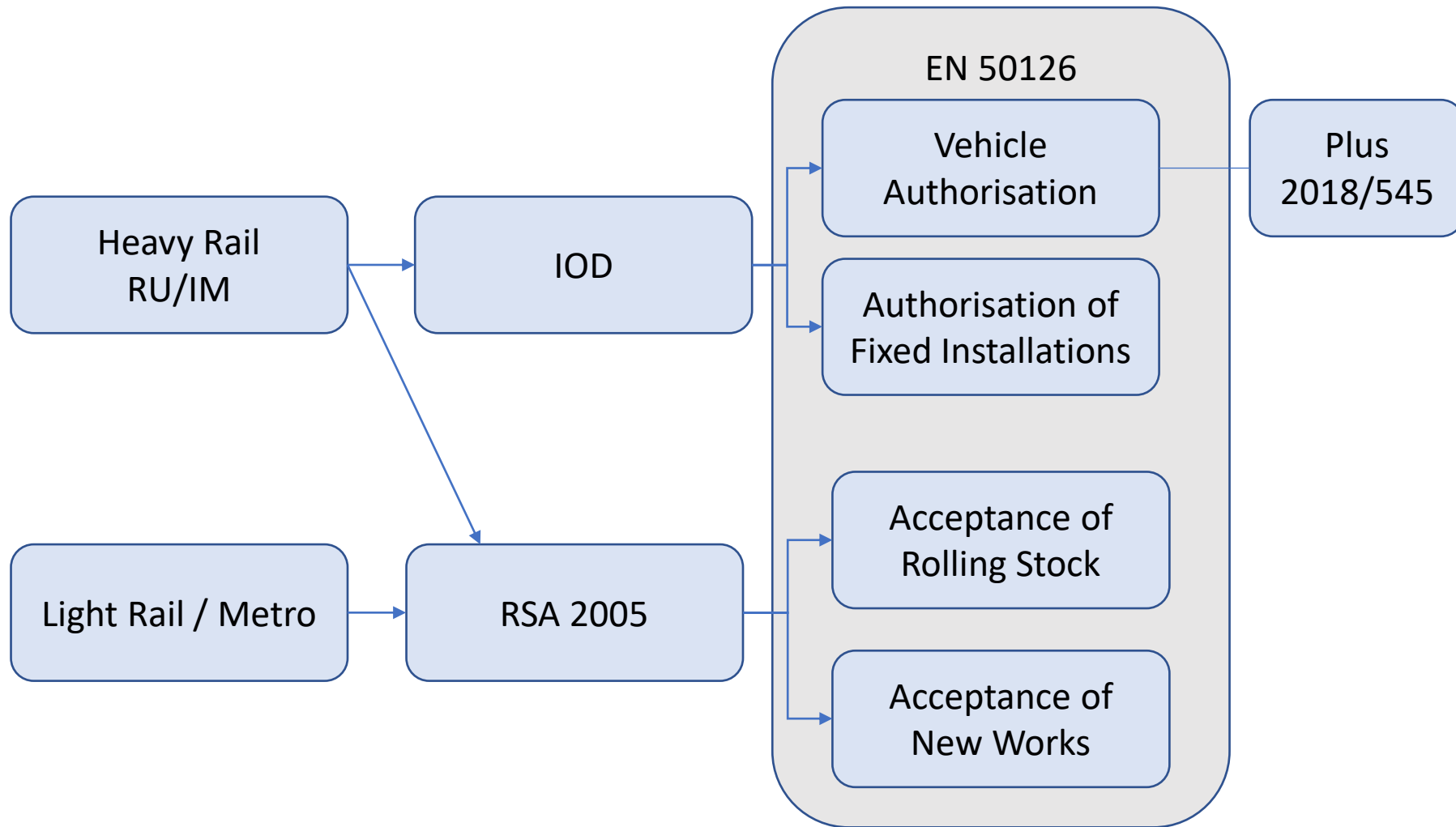


A high-speed train and a tram are shown on tracks. The high-speed train is on the left, and the tram is on the right. The tram has the number 5003 on its side. The background shows a hilly landscape with trees and a utility pole.

Requirements Capture

Michael Neale

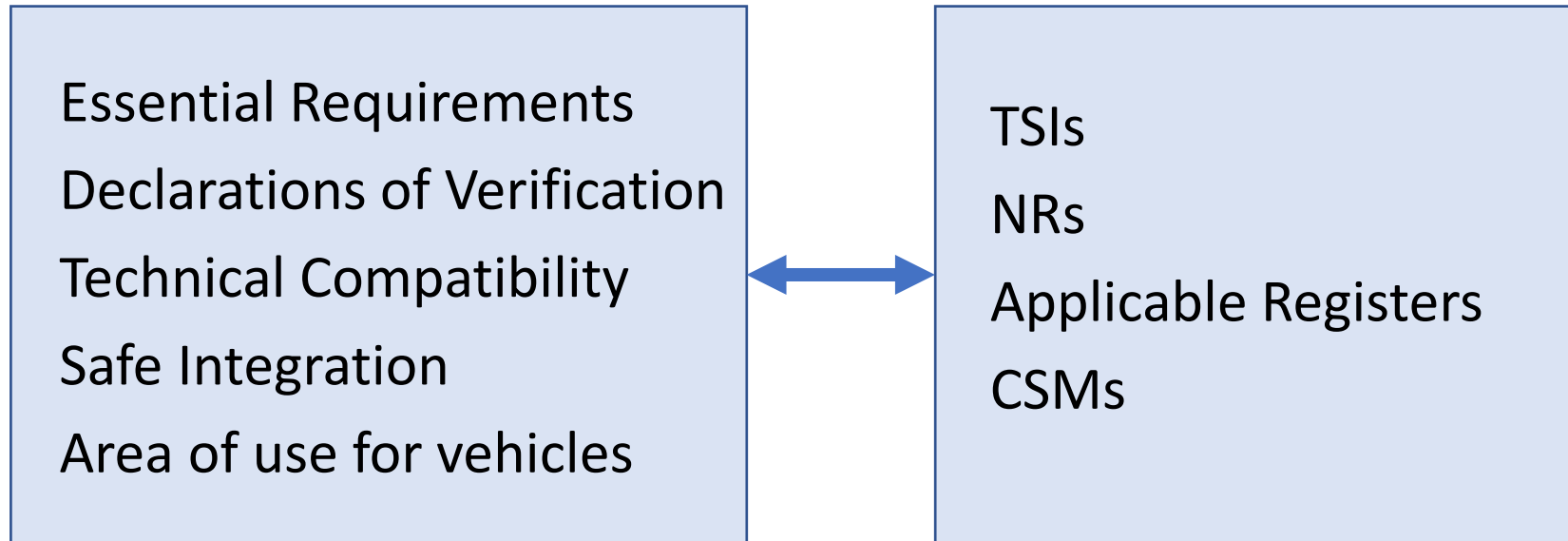


What is 'Requirements Capture'?

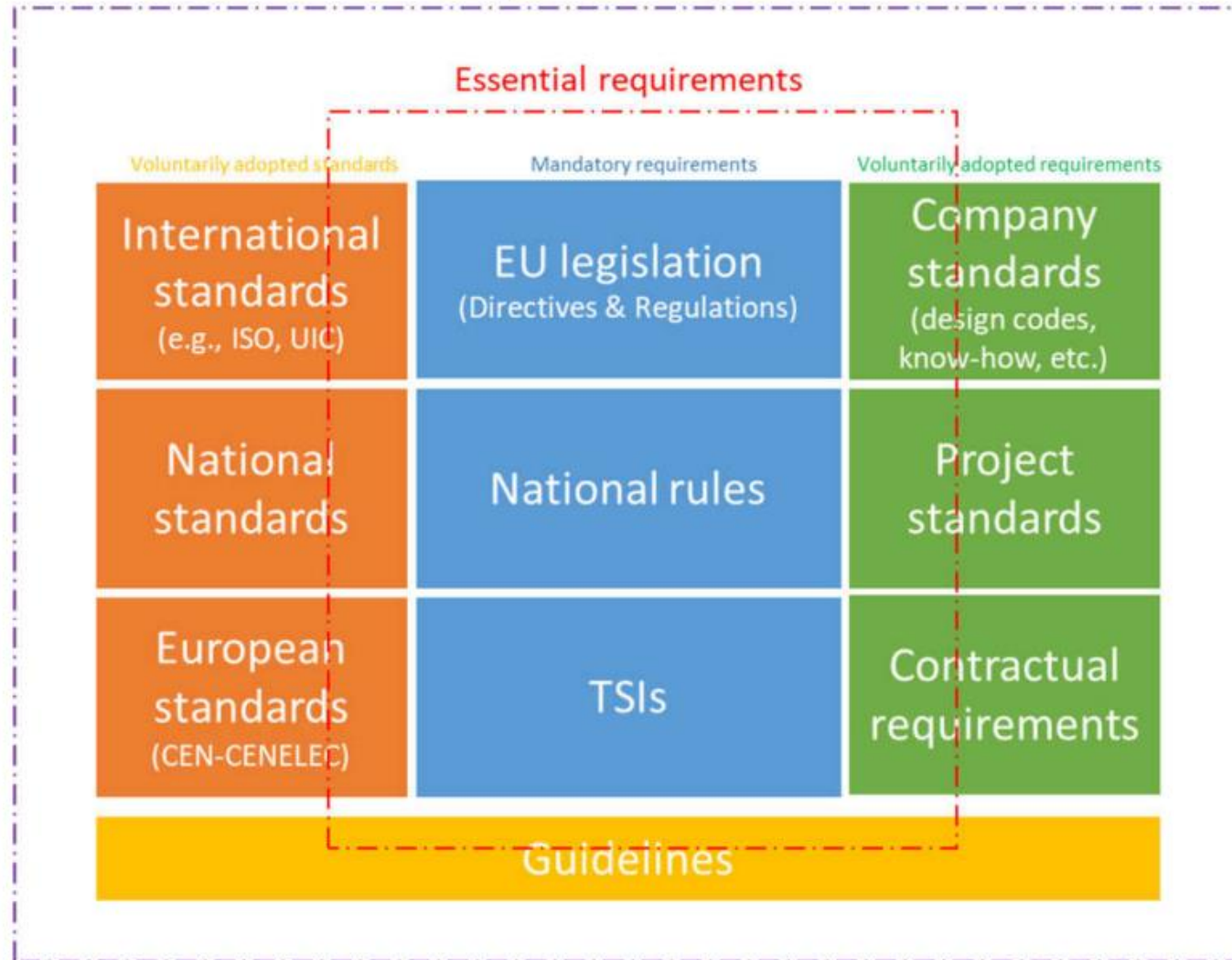
(EU) 2018/545:

- Identification
- Assignment
- Implementation
- Validation

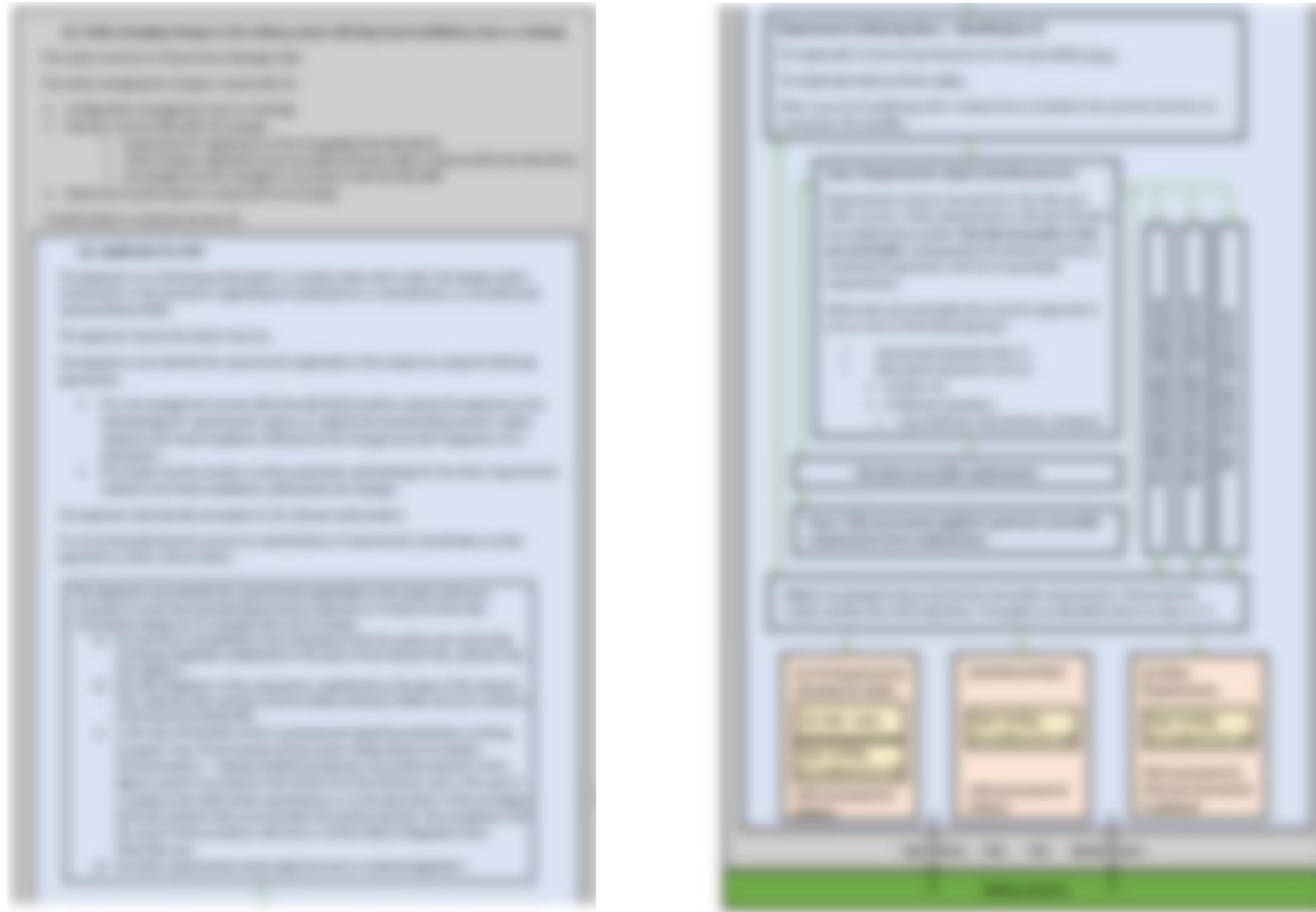
What are the Requirements (IOD)?



Requirements capture



CRR-G-009 Annex 5 Figure 1



Entity Making Change Responsibilities

- Significance Check
- Placing in Service
- Configuration management
- Determine if authorisation is required

Applicant Responsibilities

- Requirement capture
- Determine authorisation(s) required

Step 1: Identification

Step 1: Identification



Step 2:
Assignment and Development

Step 1: Identification

Step 2:
Assignment and Development

Not (yet) assessable requirements

TSI related assessable requirements

NR related assessable requirements

Other assessable requirements

Step 1: Identification

Step 2:
Assignment and Development

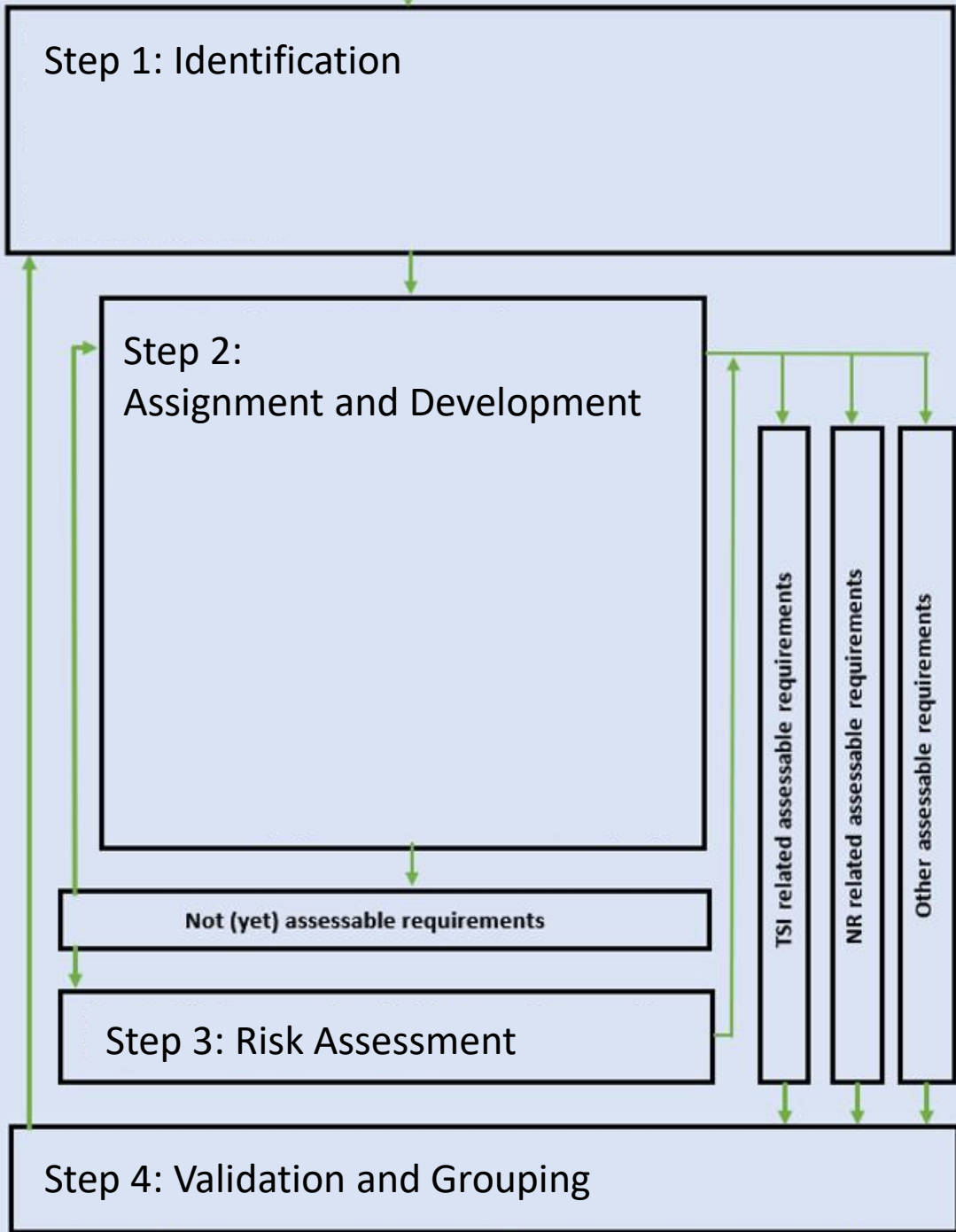
Not (yet) assessable requirements

Step 3: Risk Assessment

TSI related assessable requirements

NR related assessable requirements

Other assessable requirements



Requirements Gathering Step 1 – Identification of:

The Applicable Technical Specifications for Interoperability (TSIs);

The Applicable National Rules (NRs);

Other sources (Considering other residual items included in the previous box but not covered by TSIs and NRs.

Step 2 Requirements Capture Iteration process:

Requirements may be sourced from TSIs, NRs and other sources. These requirements in the first iteration are categorised as either: **Directly Assessable** or **Not yet Assessable**. Subsequently the iteration process is continued to generate a full set of assessable requirements.

Where Not yet Assessable they may be supported in one or more of the following ways:

- Harmonised Standard (HS), or
- Alternative Solution/s such as:
 - Another HS;
 - A Different Standard;
 - (e.g. National, international, company)

Not (yet) assessable requirements

Step 3: Risk Assessment applied to generate assessable requirements from residual items.

Step 4: Grouping/sorting of all directly assessable requirements. Check that the output satisfies the initial objectives. If any gaps are identified return to step 1 or 2.

TSI related assessable requirements

NR related assessable requirements

Other assessable requirements

Example

- TSI LOC and PAS 4.2.2.9. Mechanical characteristics of glass (other than windscreens)
 - Where glass is used in glazing (including mirrors), it shall be either laminated or toughened glass which is in accordance with one of the **relevant publicly available standards suitable for railway application** with regard to the quality and area of use, thereby minimising the risk to passenger and staff being injured by breaking glass.
- ISO 22752:2021(en) Railway applications — Bodyside windows for rolling stock
 - ISO 3917:2016 Road vehicles — Safety glazing materials — **Test methods** for resistance to radiation, high temperature, humidity, fire and simulated weathering
 - ISO 7892:1988, Vertical building elements — **Impact resistance tests** — Impact bodies and general test procedures

Summary

- Requirements management is Crucial
 - Identification, Assignment, Implementation and Validation
- The applicant is responsible for Requirements Capture
- Requirements broader than TSIs and NRs
- Acceptable Approach in CRR-G-009 Annex 5

