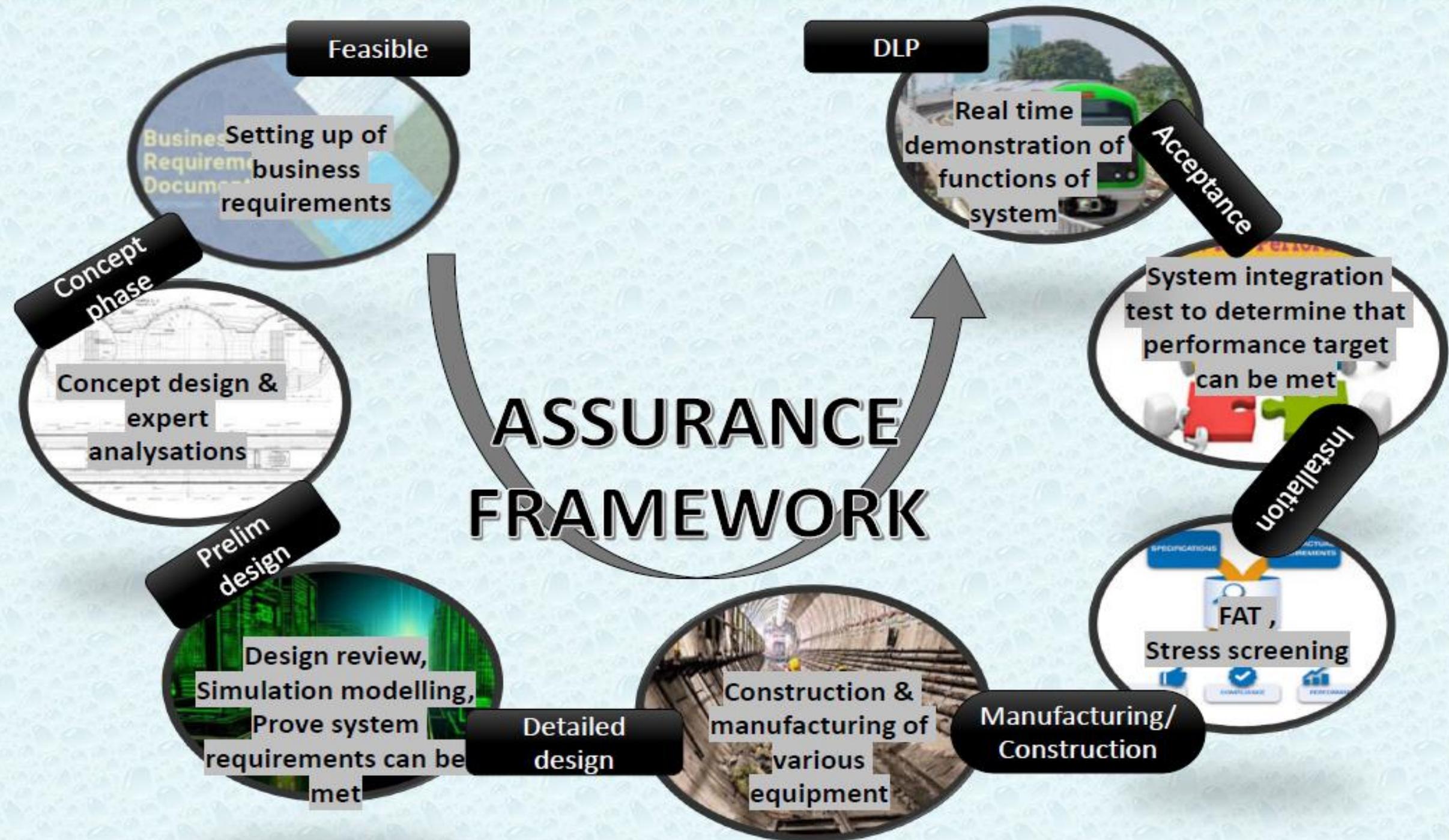




INTELLEX

Assurance Framework



System assurance

- System Assurance is the process a project shall adhere to ensure that its goals are delivered safely and reliably as well as meet its objectives. This involve assuring the products and the systems used as well as assuring the process followed in the system development.
- System Assurance shall be applied throughout the design, procurement, manufacture, construction, installation, integration, testing and commissioning phases.

Assurance hierarchy

- **Product level**-Assuring the products used in the project has been developed in accordance with applicable standards, proven legacy of maturity of application.
- **Subsystem level**-For larger projects, system is divided into subsystems functionally. Each subsystem requires a degree of Assurance deepening on its safety criticality.
- **System level**-System Assurance is about assuring the change introduced to the railway is integrated properly and any risk arising from interface hazards has been mitigated to ALARP.

Assurance stages

Project lifecycle stage gates are defined. Standards provide various lifecycle stages e.g. EN 50126, RIBA, GRIP. Generally they all align to-

- Feasibility
- Concept Design
- Prelim Design
- Detailed design
- Construction/Manufacturing
- Installation
- Acceptance
- Defect Liability Period

Assurance stages framework

- **Concept Design Assurance** – The assurance provided at the stage of concept design to demonstrate that the concept design is fit for purpose and any risk introduced has been mitigated to ALARP.
- **Design Compliance Assurance** – The assurance submission at the detailed design stage to demonstrate that the same is fit for purpose and any risk introduced has been mitigated to ALARP.
- **Testing Assurance** – The assurance submitted during the testing stage to demonstrate that the testing activities does not introduce any risk to the operational railway.
- **Commissioning Assurance** – The assurance at the commissioning stage to demonstrate that the proposed system has an accepted design, passed the tests and is demonstrated to be fit for purpose and any risk has been mitigated to ALARP.
- **Assurance for System Handover** – The assurance after successful commissioning of the system and the liability period to demonstrate that the system is fit for purpose and any risk has been mitigated to ALARP.

How assurance regime is implemented??

- A project management framework should be defined where the assurance process is implemented.
- Specific activities should happen according to standards e.g. EN50126, design development standards.
- Documentary evidences of the performance of the activities should be produced which should be duly assessed & approved.
- Stage wise assurance audits are conducted by assurance management team.
- Gate reviews are conducted at each stage specifically at the major stages.