

Track 2.2:

Success in Systems Engineering Readiness for a Complete Life Cycle

Chairman: Ami Harel, CEO, End To End Systems Ltd.

Concept Selection as A First Step,
its Completeness and Holiness

Ami Harel, CEO, End To End Systems Ltd.

Success in Systems Engineering Readiness for a Complete Life Cycle

Success of a system requires those involved in its formulation and implementation to take into account all aspects of the complete life cycle right in the first step to the formation of the idea

Ignoring or postponing considering system aspects, whether in its realization, whether in its verification, validation, certification, whether in the human-systems' integration, whether in its maintenance, or even if in its scrapping, may be irreversible.

This track focuses on two aspects along all during life cycle process:

- Concept Selection;
- Training of the human operator in an advanced work environment (involving COBOTs)

Concept Selection as A First Step, its Completeness and Holiness

Ami Harel, CEO, End To End Systems Ltd.

קונספט - בחירתו כצעד ראשון, שלמותו וקדושתו
מרצה: עמי הראל – End To End Systems Ltd.

A Need is Identified

A process of identifying the potential customer's and the need:

- Stake Holders
- Pain Points, Motivations, Requirements, Constrains and Environment, Regulation, Taxation, Manufacturing, Shipping, Prioritization of all the above
- Competitors, Competition, Business Model, Price, Time To Market, IP

Key Decision Factors

A Need is Identified... Solution...s ?

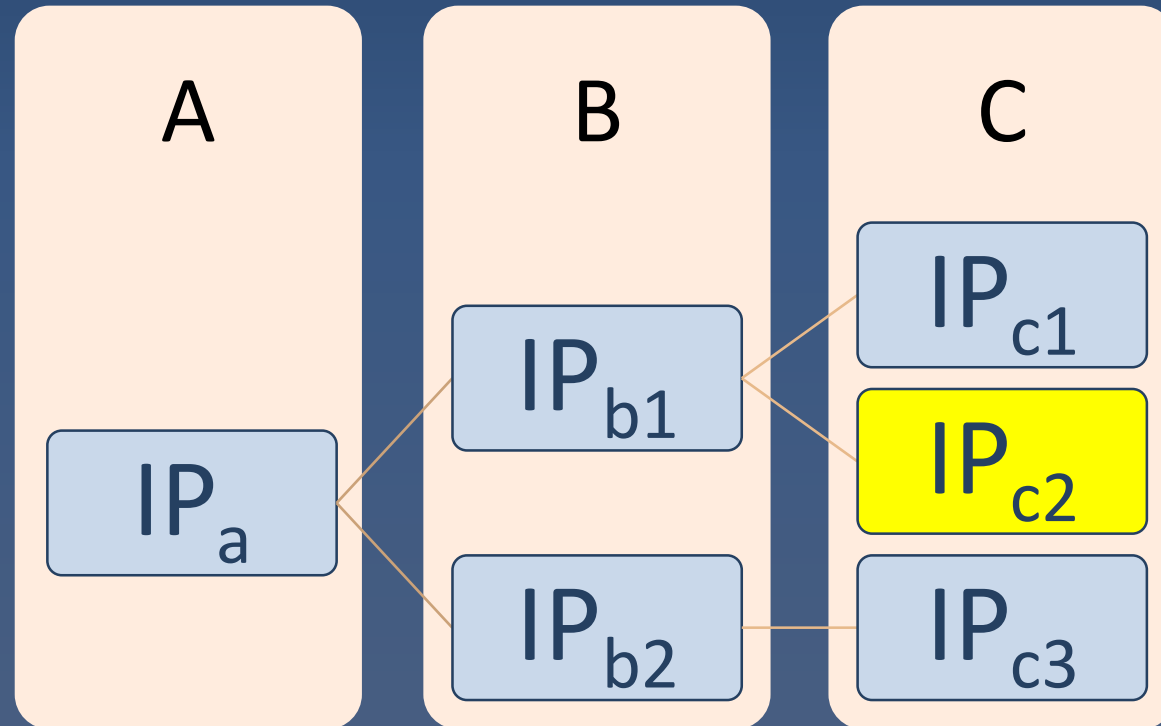


Products' Viable Choice is Available @ Global Market

- Information Revolution made global market available @ customer door step with reasonable price and delivery time
- A winning product/system must be able to globally compete
- A winning solution must be optimized to market needs (variety, performance, user experience, reliability, price, evolving technology)
- Optimization must be considered at the concept stage to all aspects
- **Non-Optimal solution leaves the stage for competition**

Did it ever happen... ?

- Intellectual Property/Export License



Did it ever happen... ?

- Commonality

Same Part Number

Did it ever happen... ?

- Maintainability

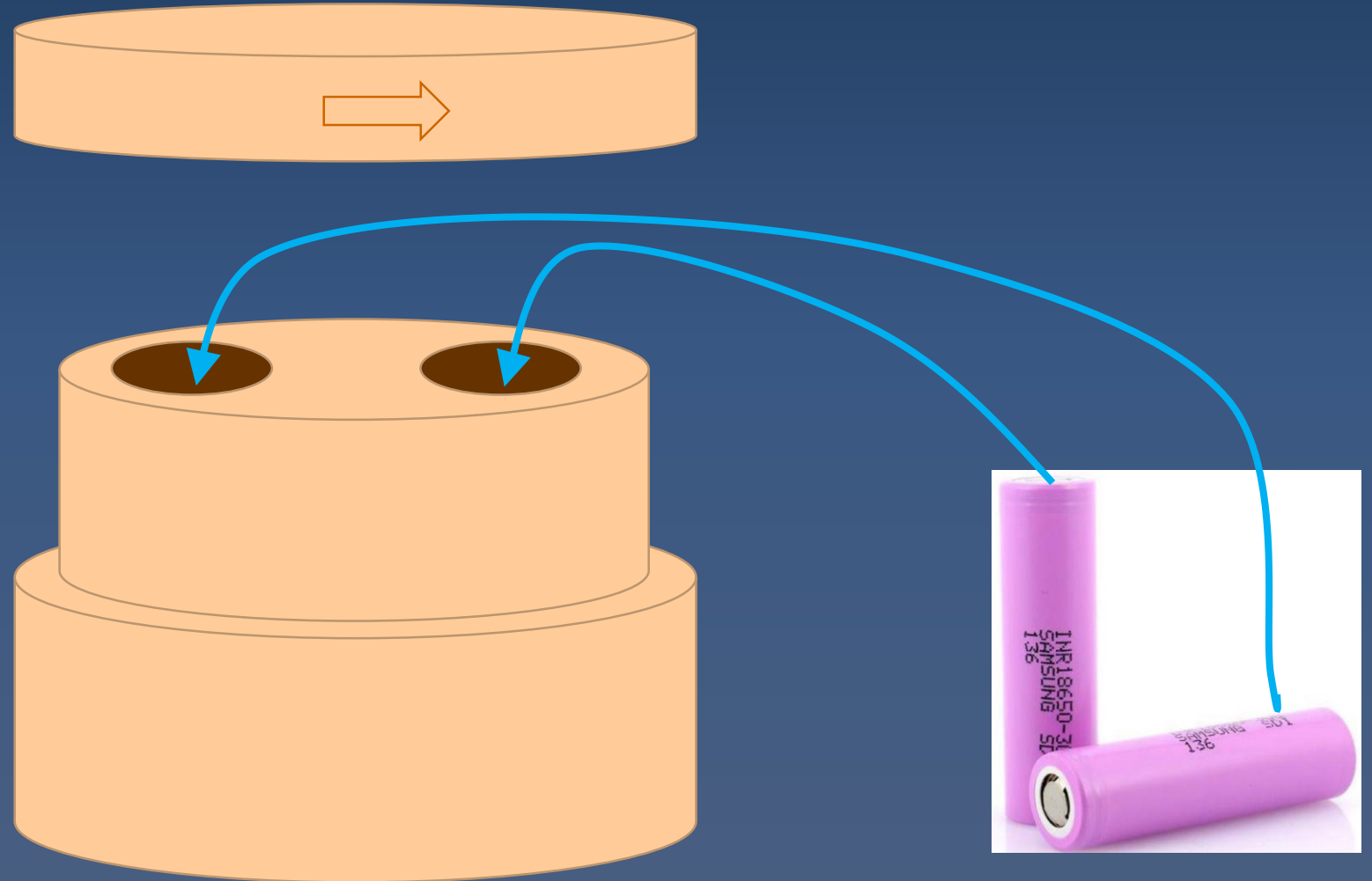
Same Part Number



O-Level Serviceability

Did it ever happen... ?

- Maintainability
- Business Model



Did it ever happen... ?

- Price



<https://www.carmax.com/car/23016327>



<https://www.mako.co.il/cars-magazine/used-cars/Article-16462a9d8c9e631006.htm>



<https://www.motor1.com/news/499337/maserati-mc20-7designs-body-kit/>

SWAT Analysis

SWOT is a summary of your

- Strengths



- Weaknesses



- Opportunities



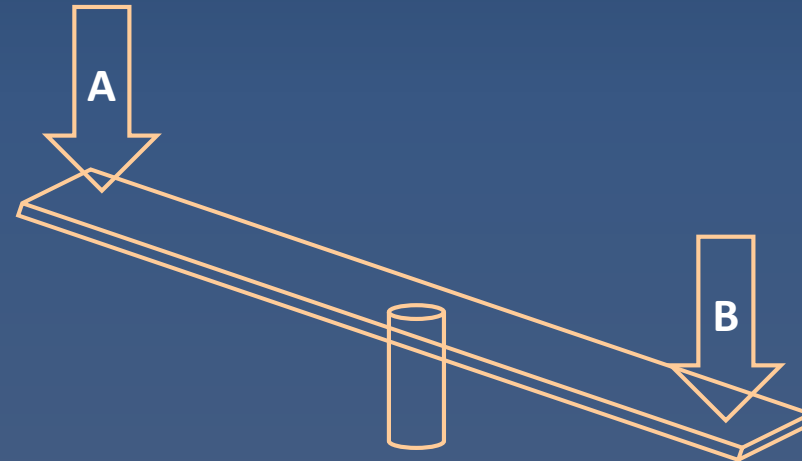
- Threats



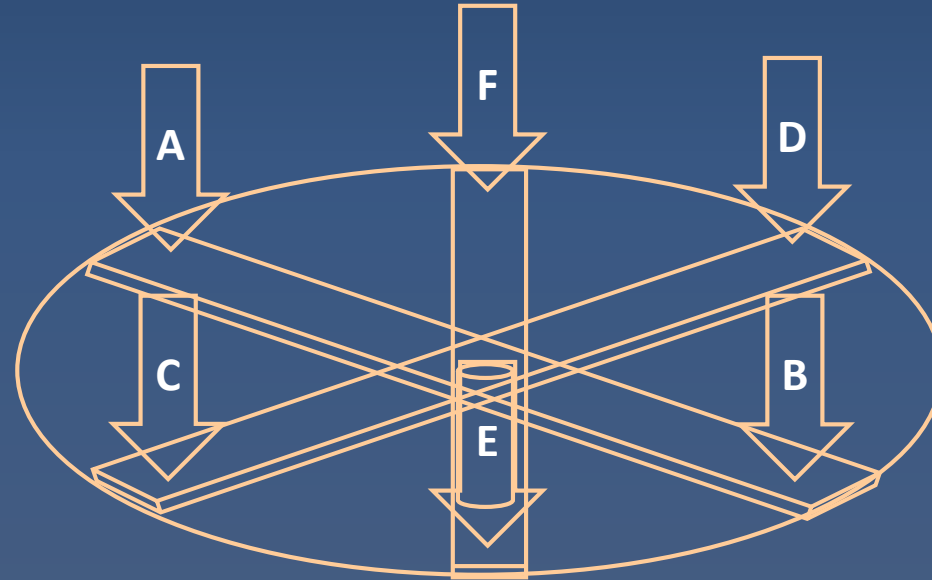
• Internal

• External

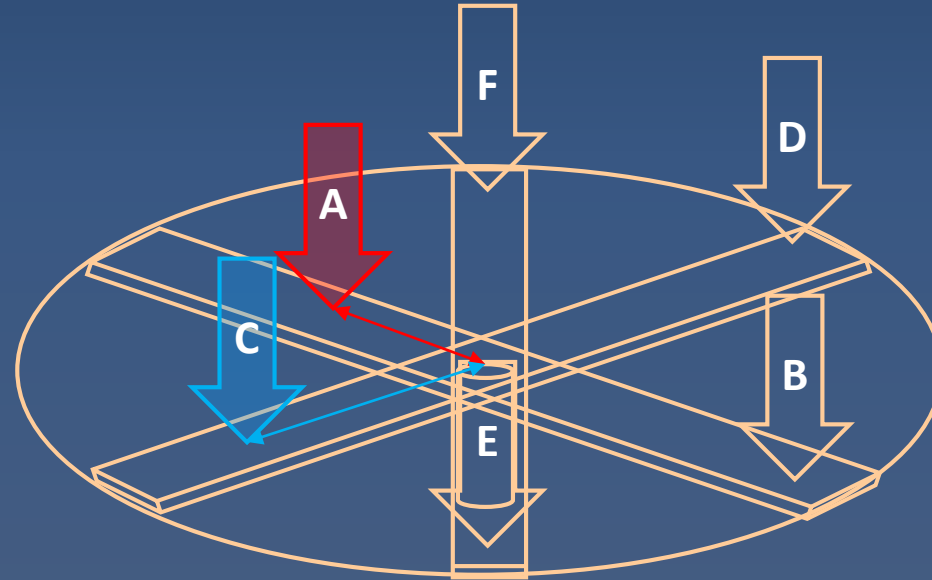
Dynamic Optimum of the Selected Concept



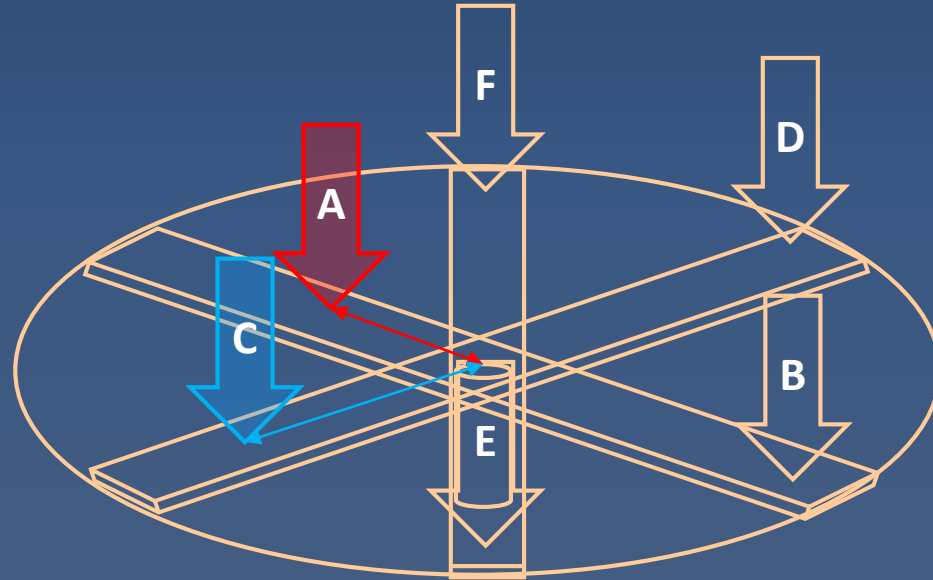
Dynamic Optimum of the Selected Concept



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Dynamic Optimum of the Selected Concept



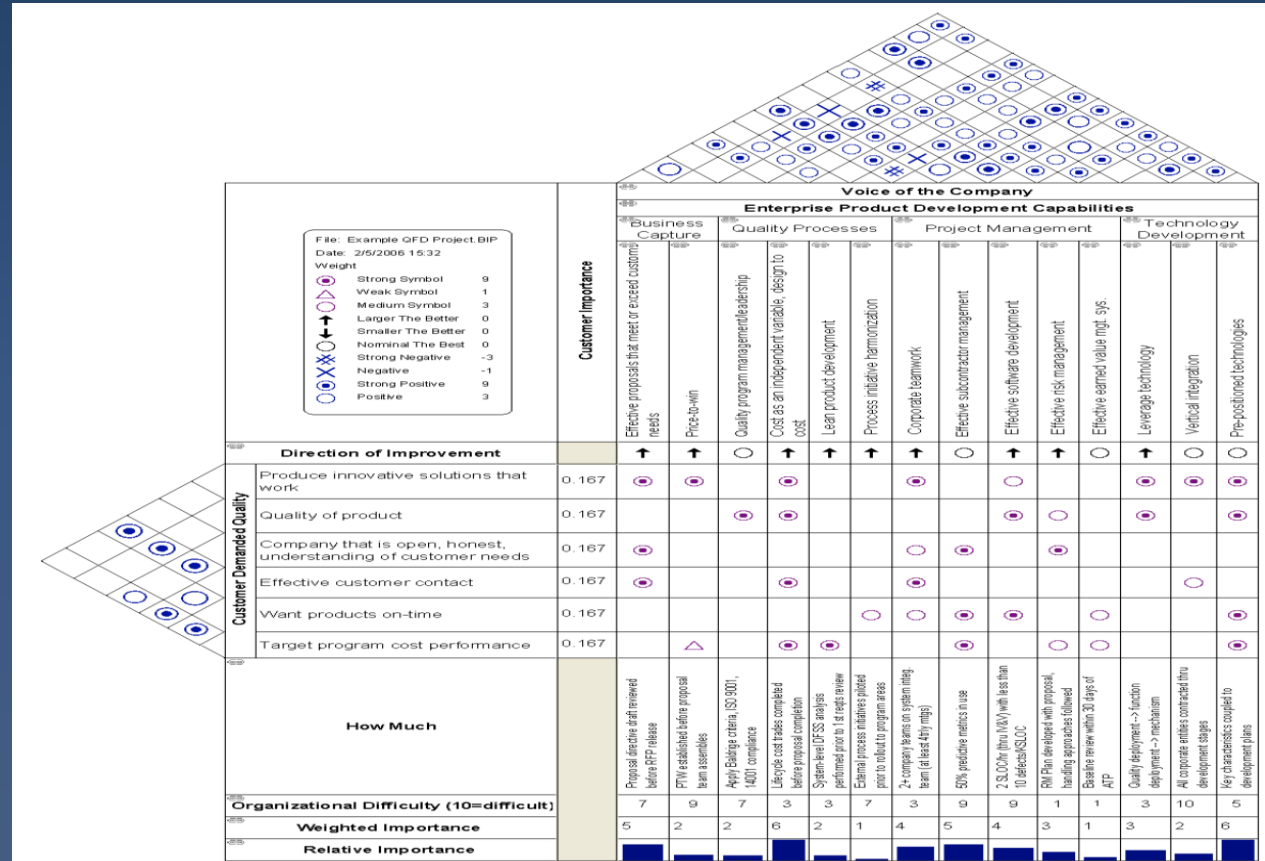
Concept, QFD

Yoji Akao, Japan, 1966

Method to transform qualitative user demands into quantitative parameters

Mitsubishi, 1972

Toyota, 1978



Stuart Pugh method
Pugh concept selection
Total Design
UK 1990

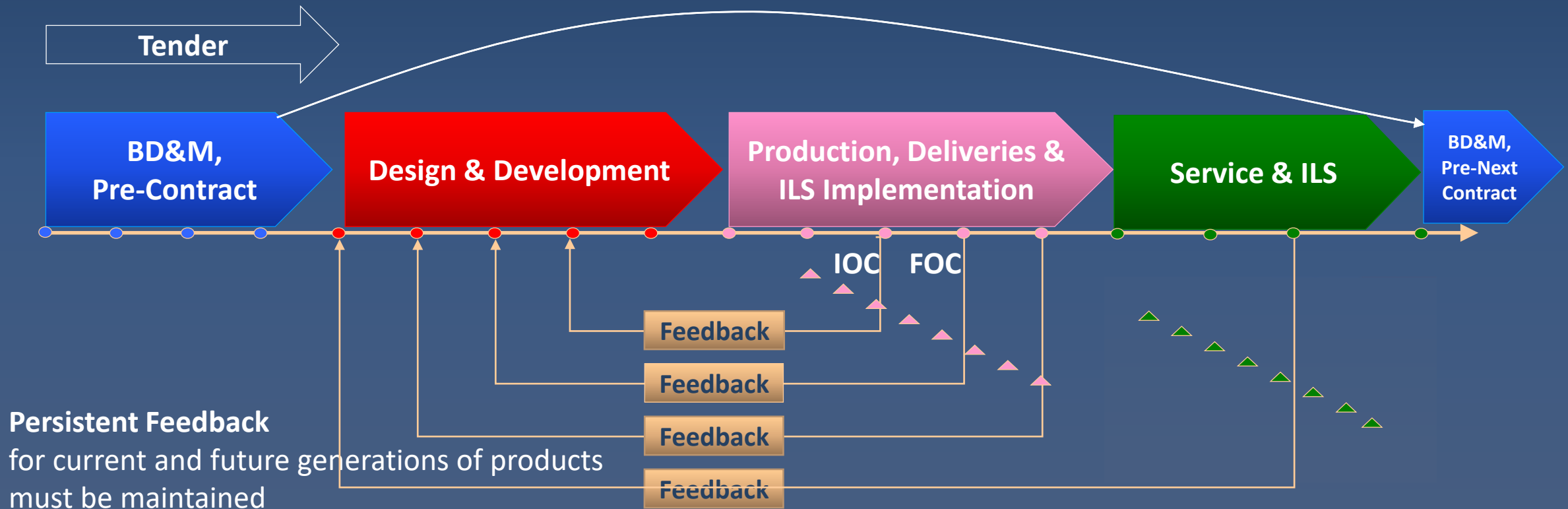
Wikipedia: Quality Function Deployment

A successful journey towards the project goal

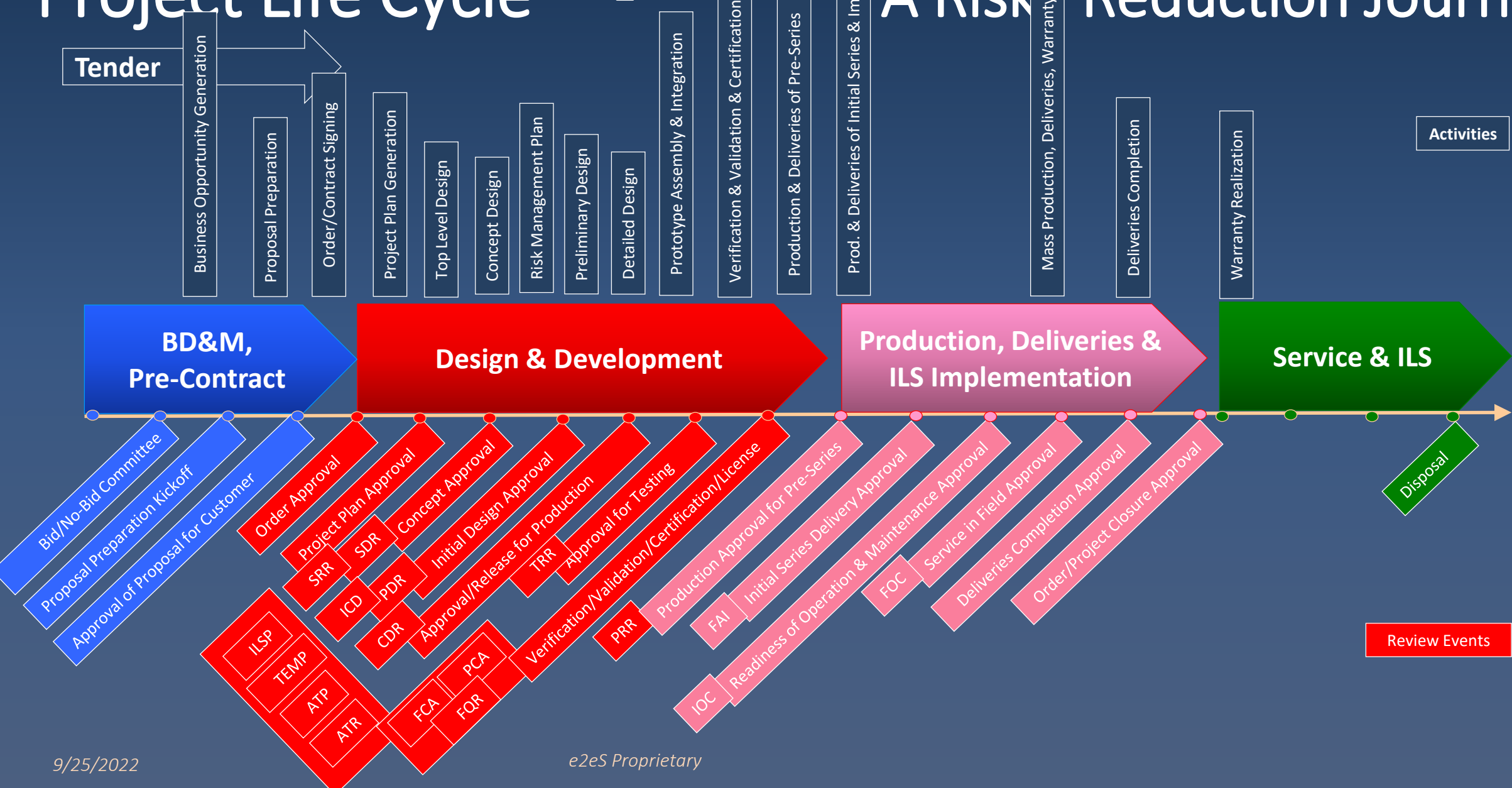


Project Life Cycle - A Risk Reduction Journey

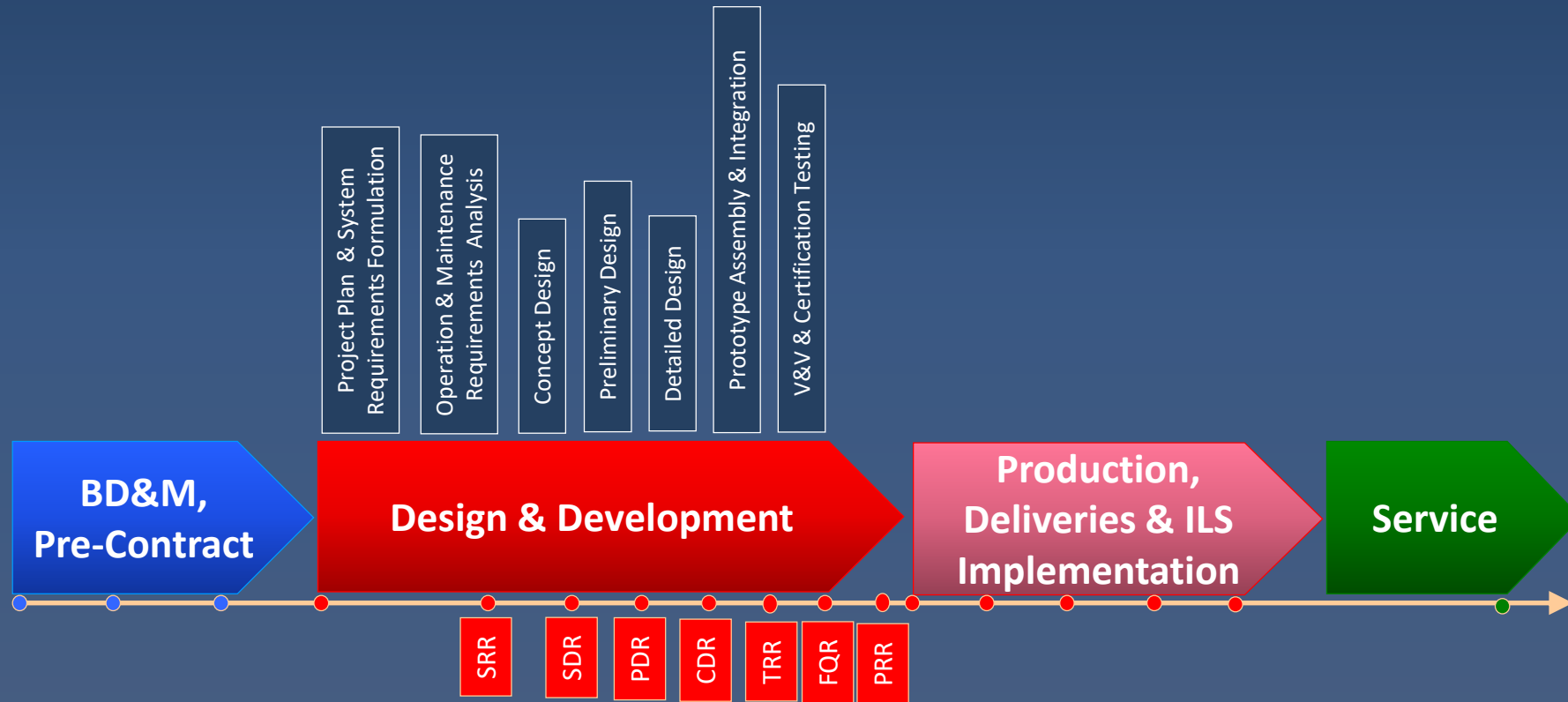
Goal - Successfully Get to the NEXT ORDER



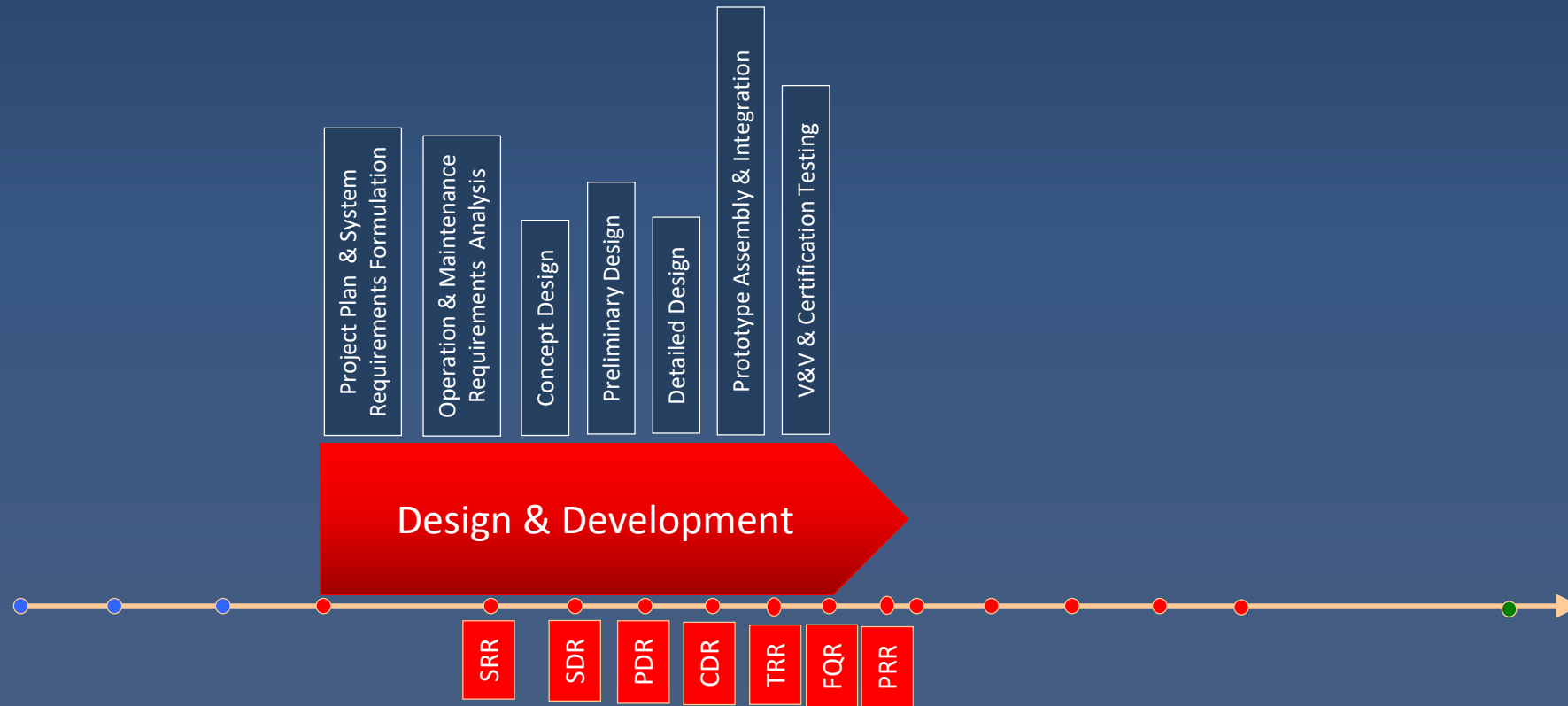
Project Life Cycle - A Risk Reduction Journey



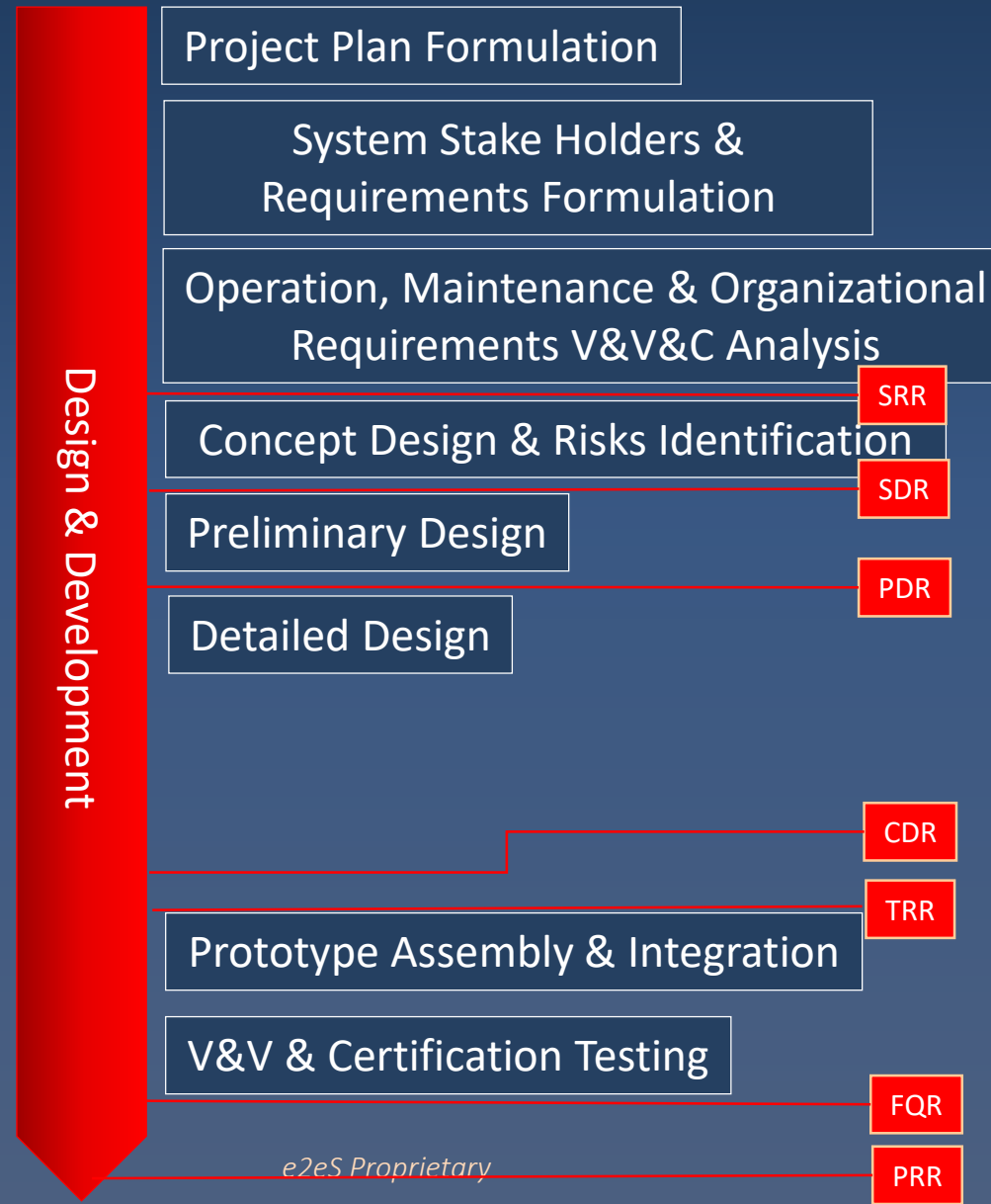
Project Life Cycle - A Risk Reduction Journey



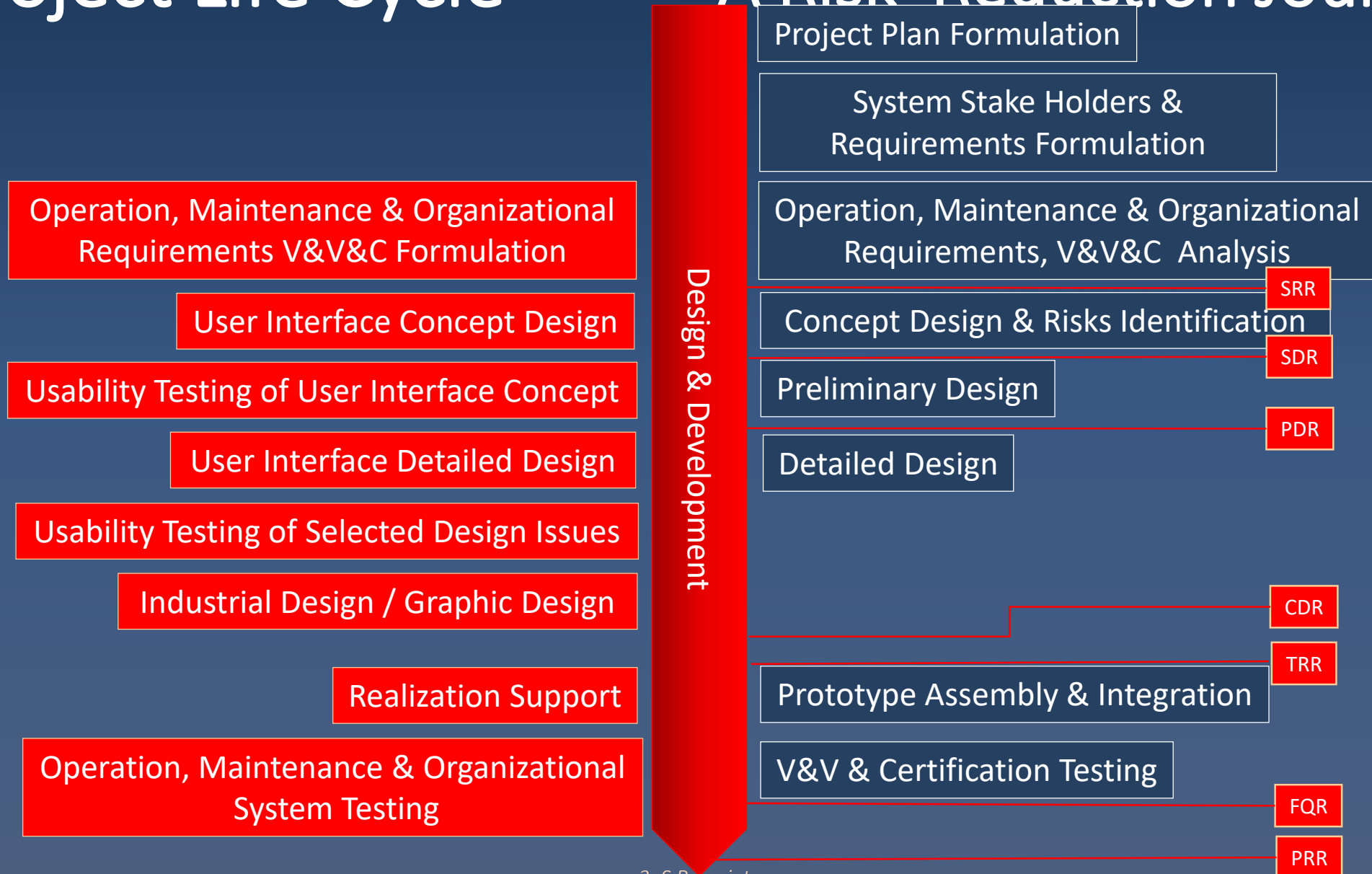
Project Life Cycle - A Risk Reduction Journey



Project Life Cycle – A Risk Reduction Journey



Project Life Cycle - A Risk Reduction Journey

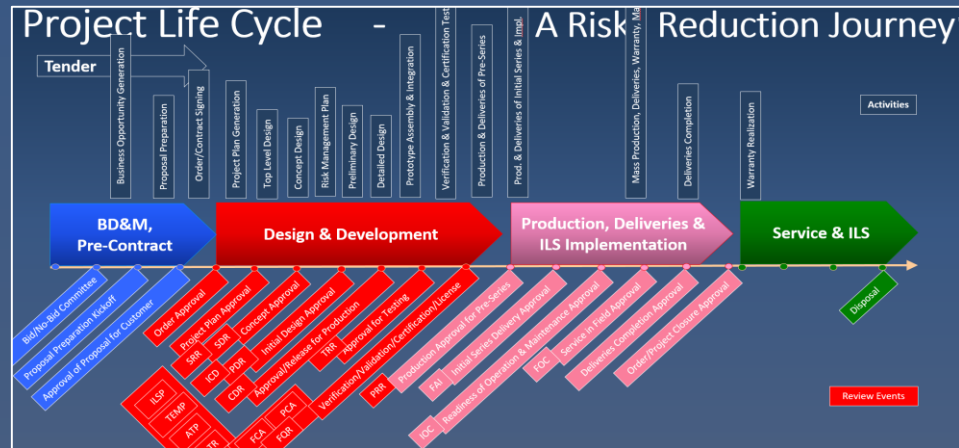


Project Life Cycle – A Risk Reduction Journey



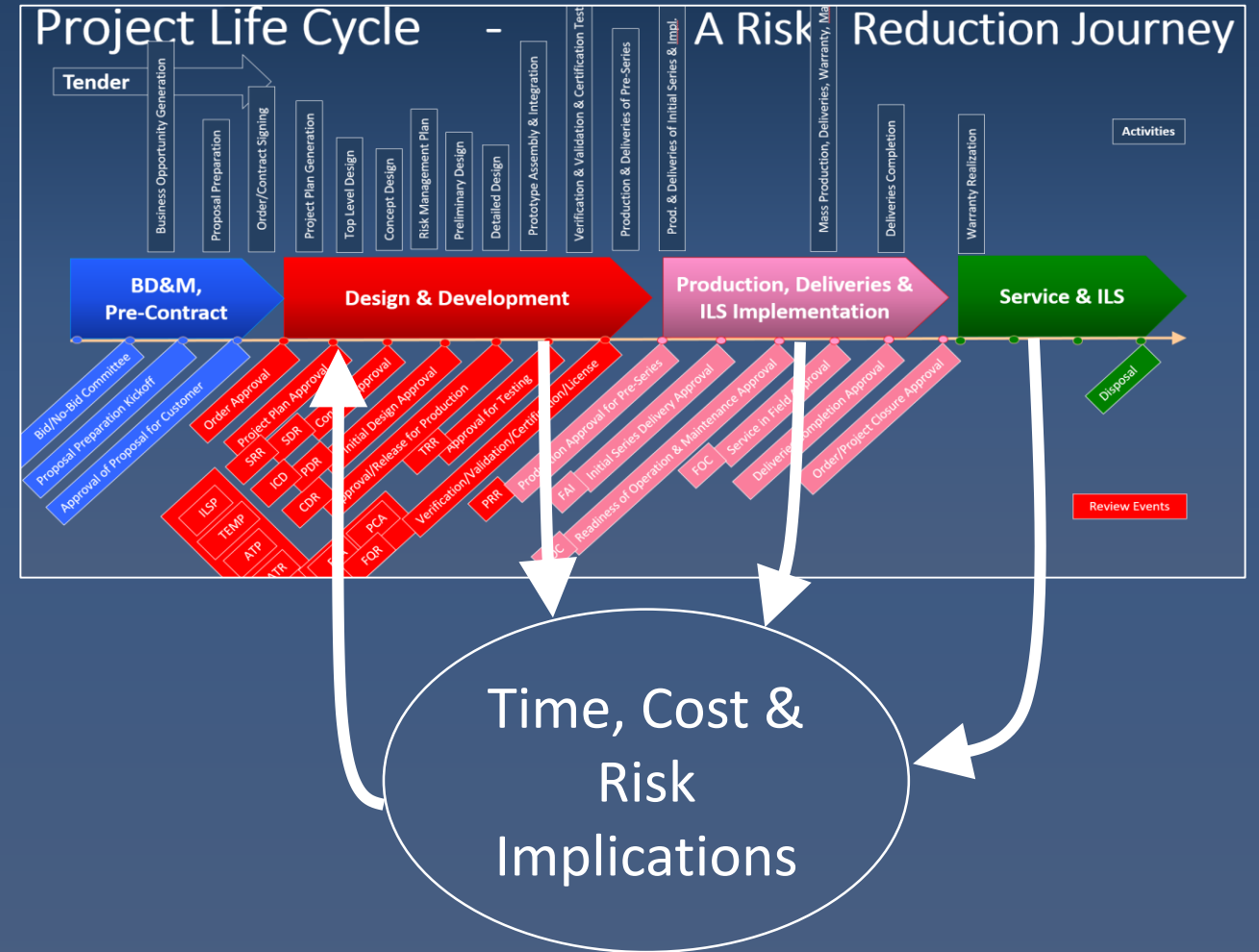
Project Life Cycle – Project Operational Aspects

- Rapid Team Work



Project Life Cycle – Contractual Aspects

- Supplier – Customer Official (ceremonial) Milestone and Approval
- Binary milestone achievement certification document (contractual & financial (cash flow))



Project Life Cycle – Point Of No Return



Wikipedia: Zip-lining in Costa Rica, January 2005

Thank You...



Questions ?