Digital Engineering Process at Isuzu

Author	Yu (Fred) Homma / Naoki (Nick) Niii
Company	Isuzu Motors Limited
Email	yu_homma@notes.isuzu.co.jp
	naoki_niii@notes.isuzu.co.jp
Phone	+81-466-45-9434

「運ぶ」を支え、環境と未来をひらく

ISUZU

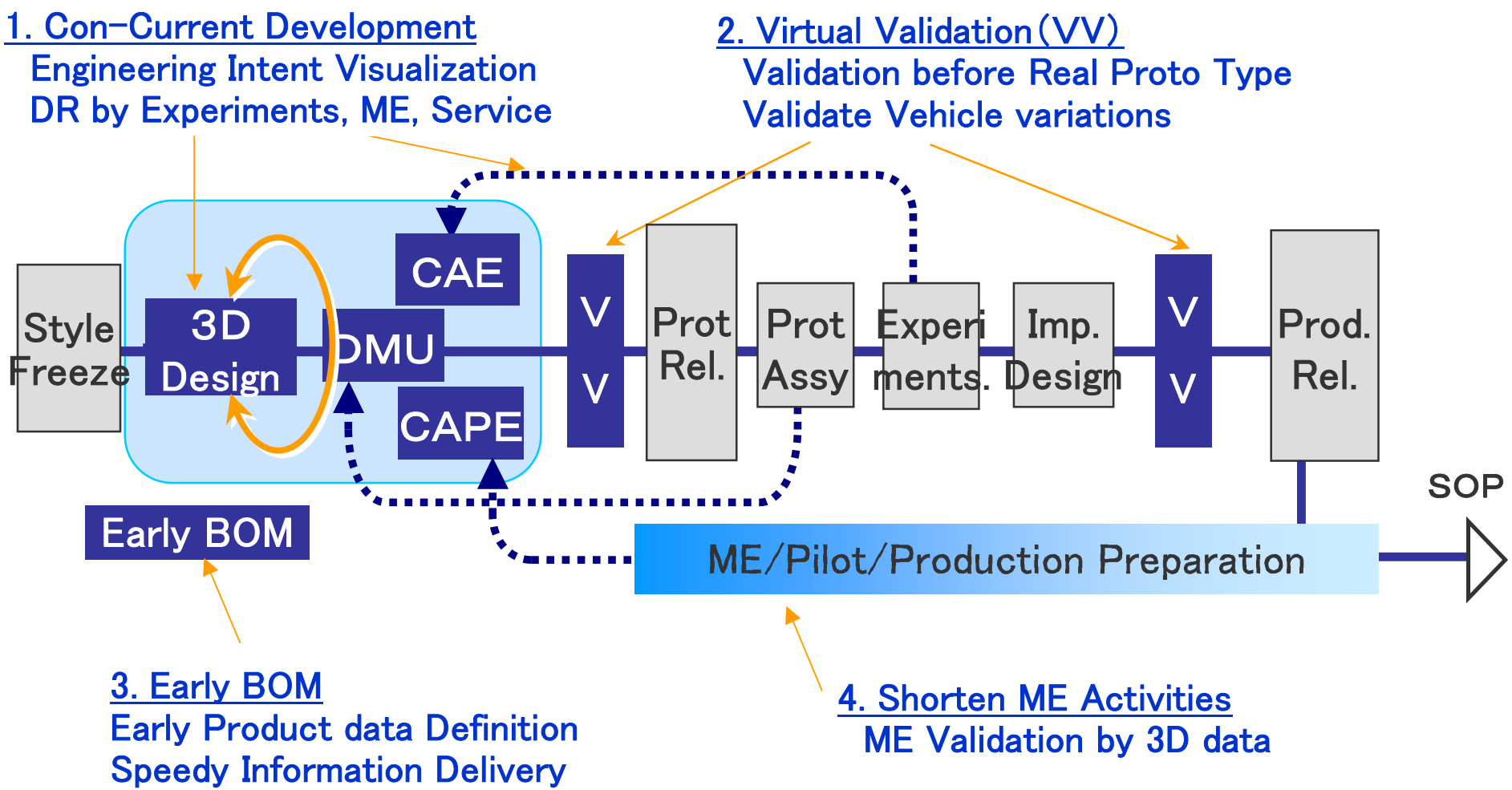
Index

- Company Outline & Products
- Digital Engineering Concept
- Achievement Summary
- Next Step

Company Outline & Products

- Establishment April 1937
- Capital $283 M
- President Yoshinori Ida
- Sales $7,653 M
- Employees 7,298
- Major Product Trucks (H/M/L), Diesel Engines
- Sales Units 233K units
- Headquarters Oomori Tokyo
- Assembly Plants Fujisawa, Kawasaki, Hokkaido, Poland, Ohio
- Engineering Detroit, Bangkok
- Office Gustavsburg

Digital Engineering Concept



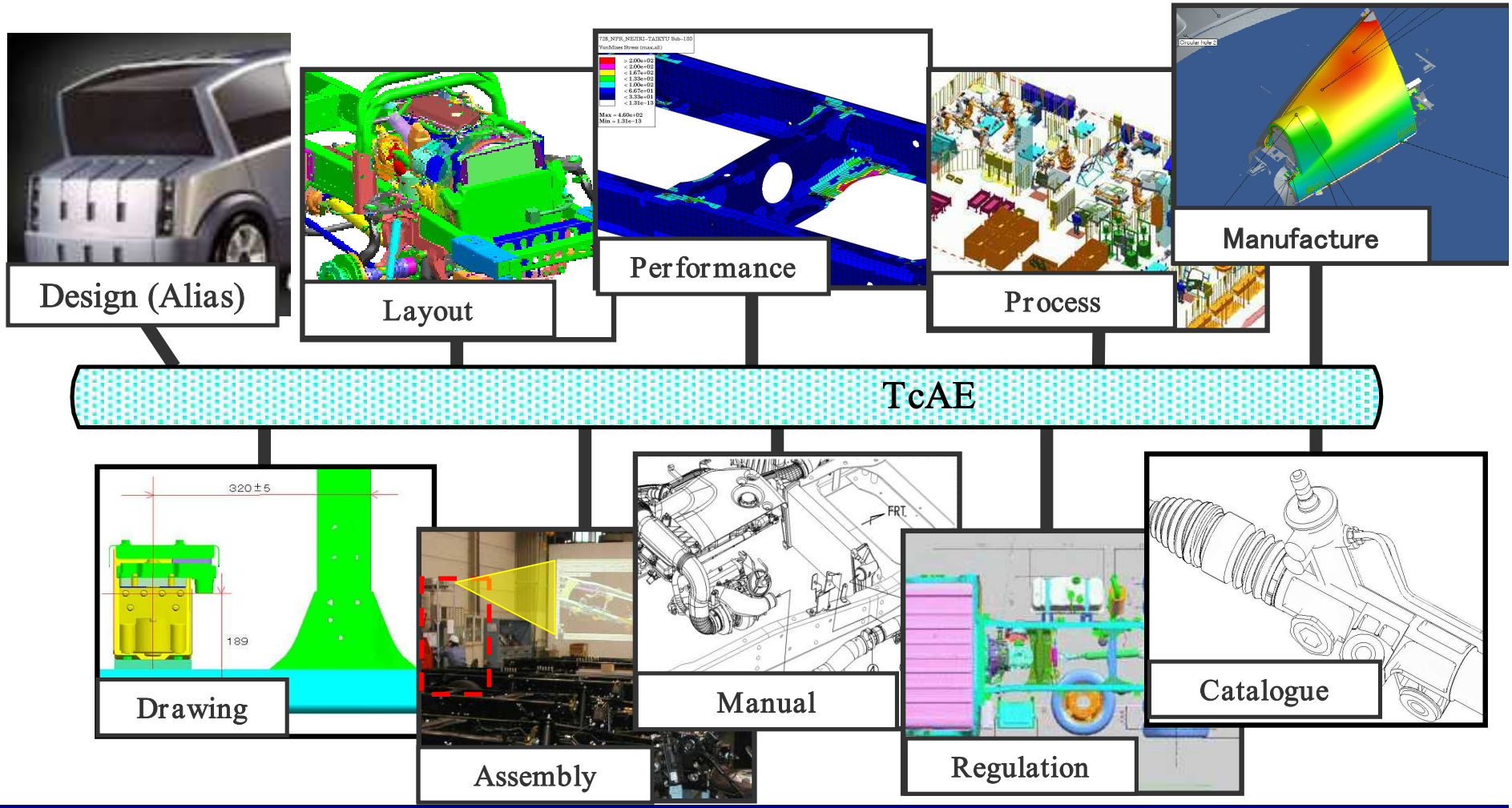
DR: Design Review

Achievement Summary

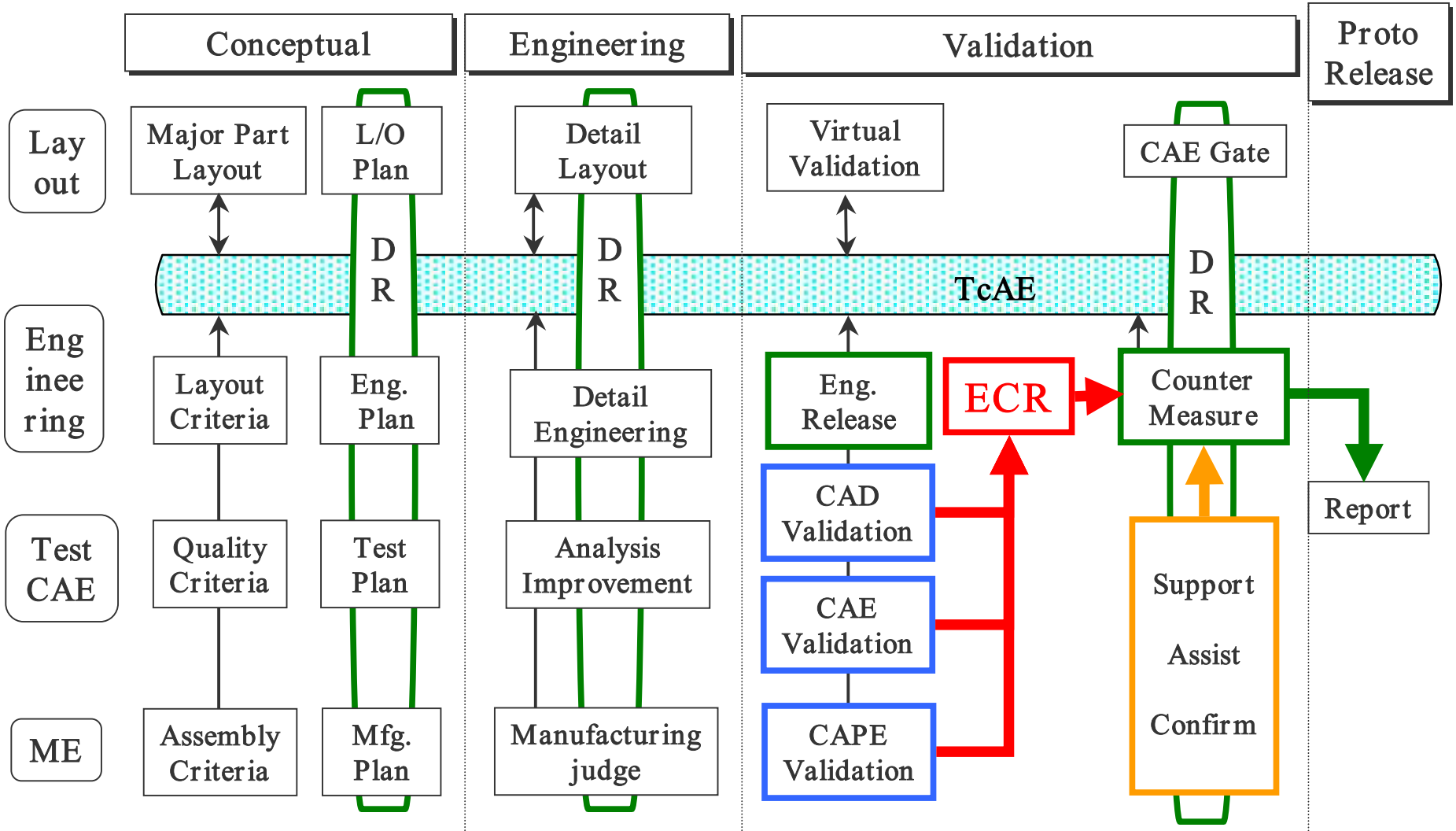
- Achievement in Virtual Validation
  - Product Data Management by TcAE
  - Process Management by CAE Gate
  - Knowledge Management by CAE Standard & CAE Automation
  - Tool Management by CAE Utilization & CAE Integration
  - User Management by CAE Skill Up Training
- Result at Current Project
  - In Process CAE at Current Project
  - Excellent Quality of the First Real Prototype

Product Data Management by TcAE

- Virtual Validation(VV) around the TcAE



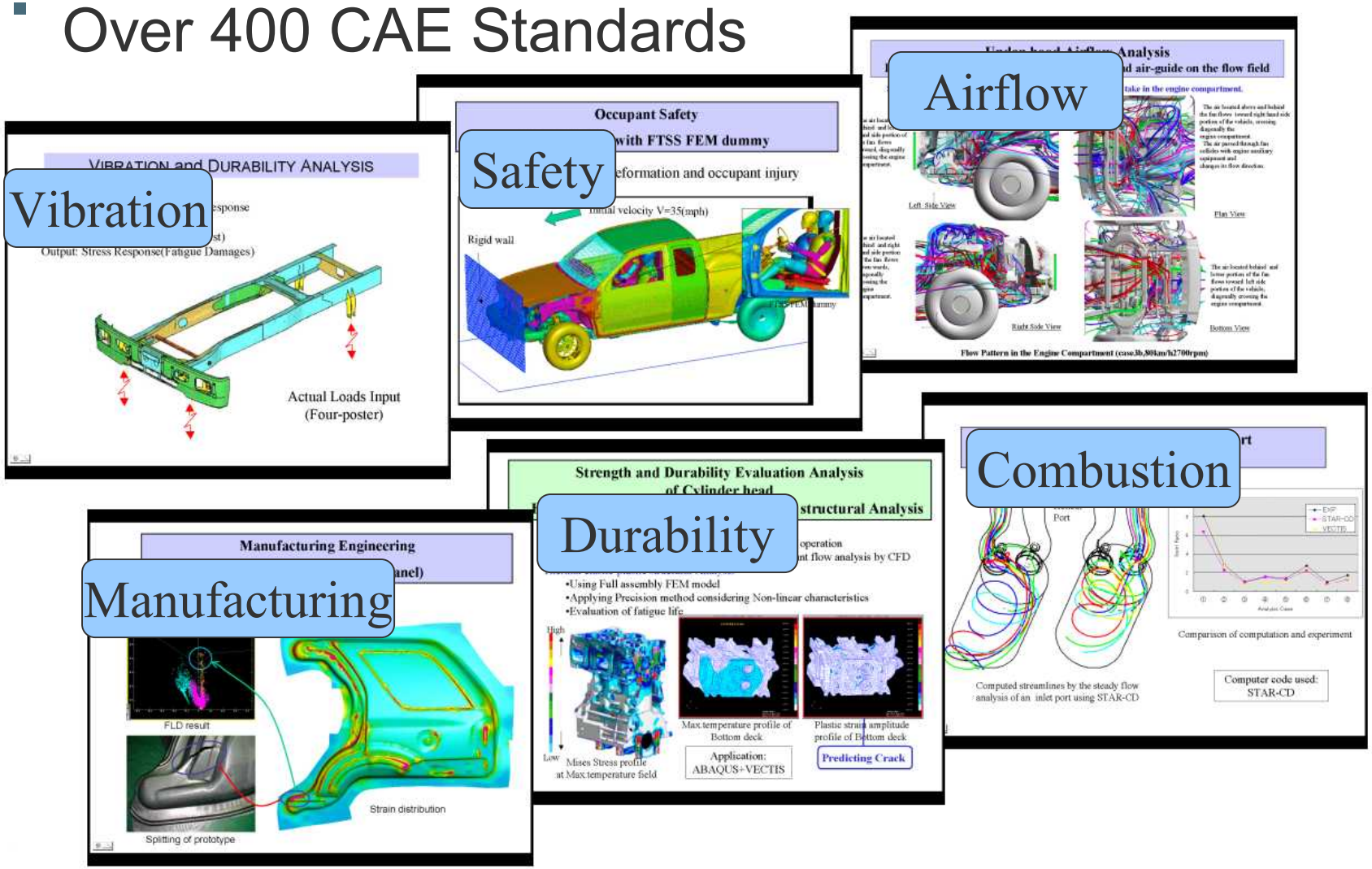
Process Management by CAE Gate



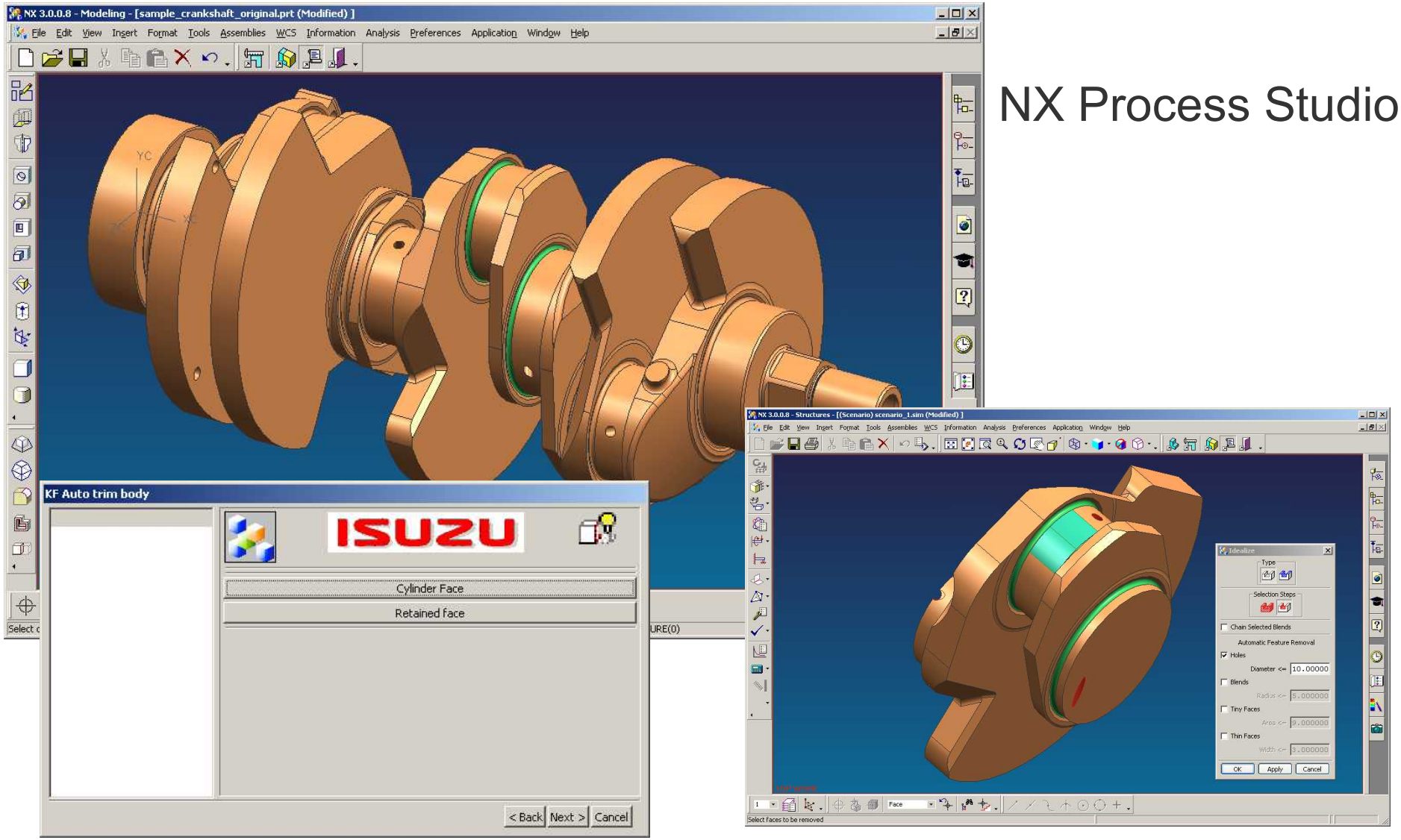
LO ; Layout DR ; Design Review ECR ; Eng. Change Request

Knowledge Management by CAE Standard

- Over 400 CAE Standards

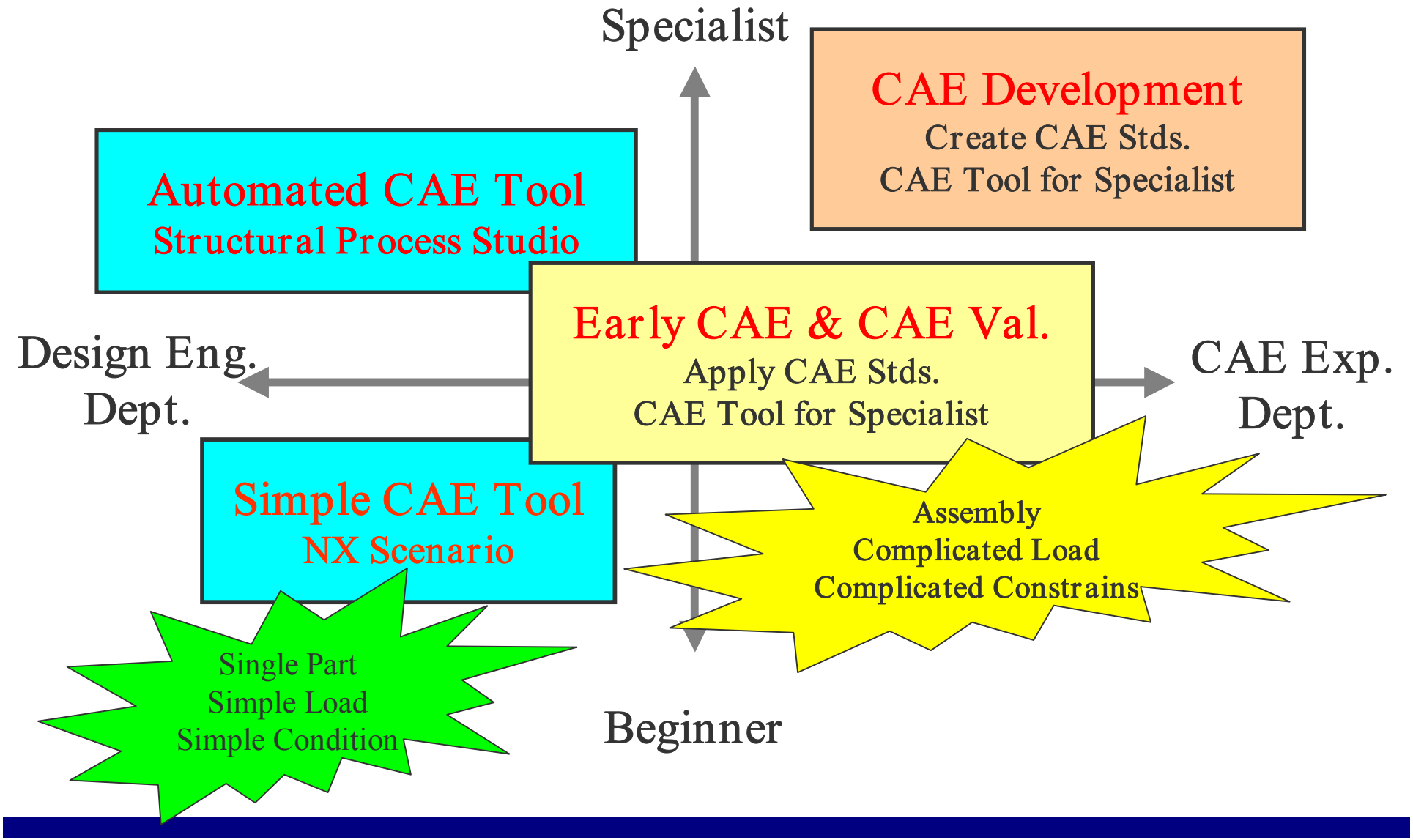


CAE Automation using the CAE Standard

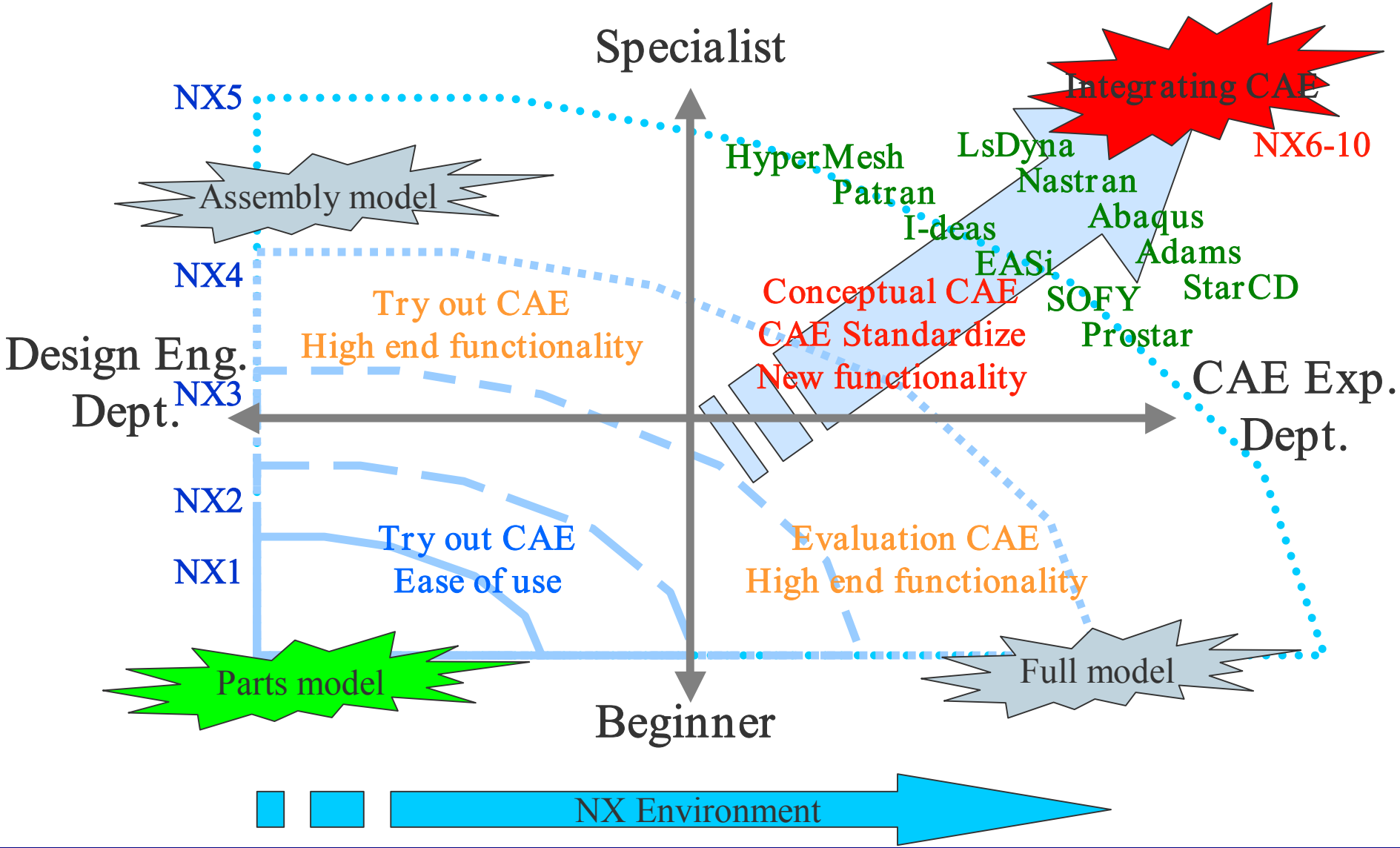


NX Process Studio

Tool Management by CAE Utilization



Tool CAE Integration on NX Env.



User Management by CAE Skill Up Training

- 700 NX Scenario Users*
  - Japan
  - Thailand
  - USA**
  - China**

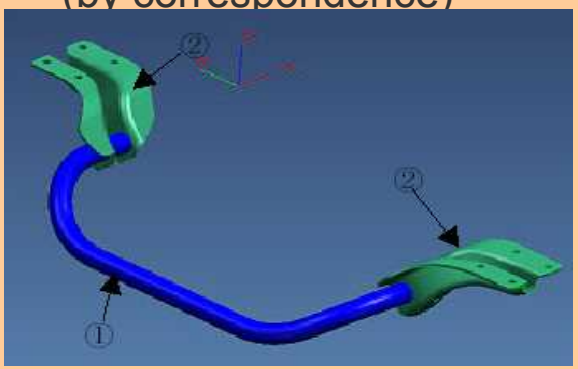
Certification

Step1 -- Basic

1. Virtual Development Process
2. Application
3. Theory
4. Modeling
5. Verification
6. CAE Standard
7. Reporting

Step2 -- Operation

Step3 -- Enhancement Training
(by correspondence)

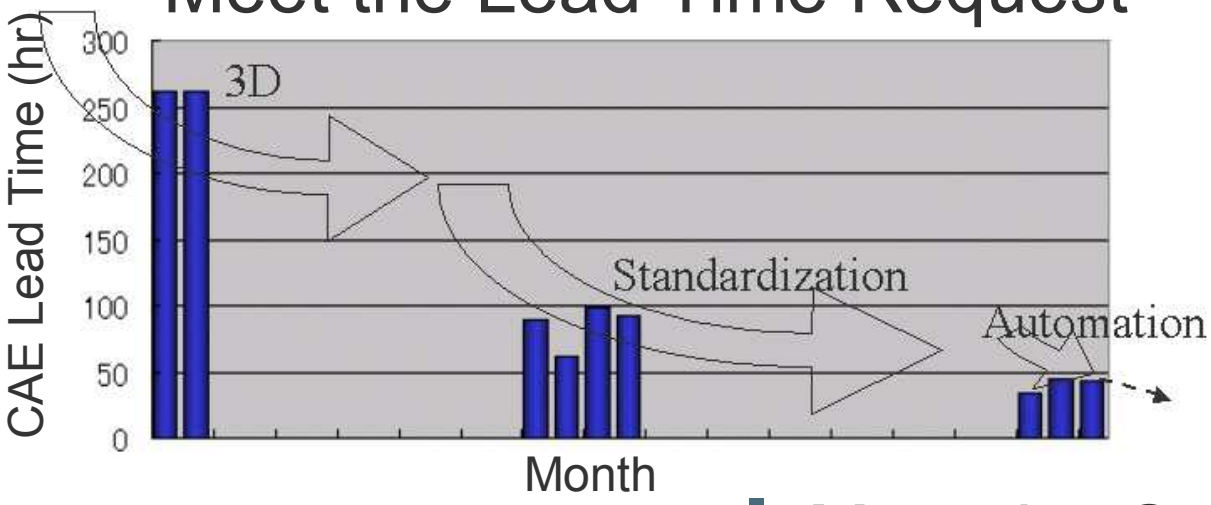


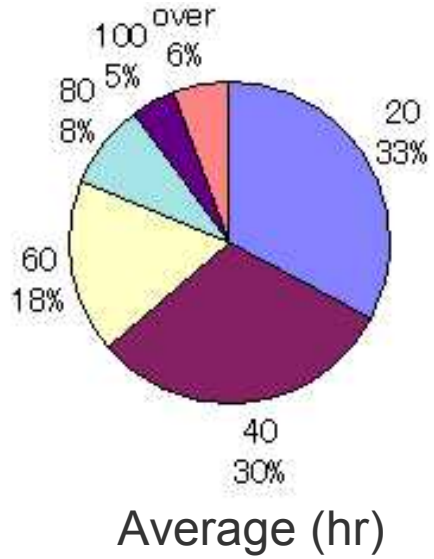
* 500 users so far

** form now on

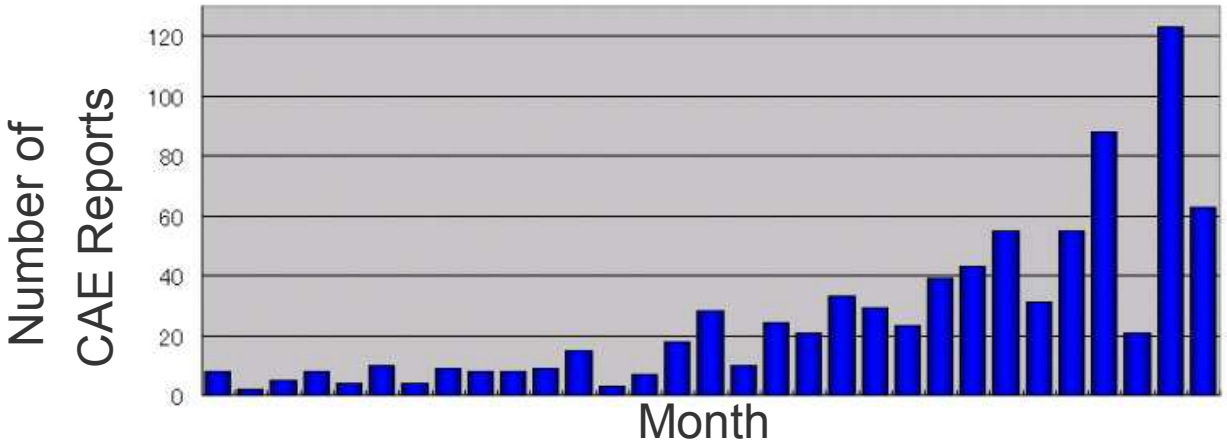
In Process CAE at Current Project

- Meet the Lead Time Request

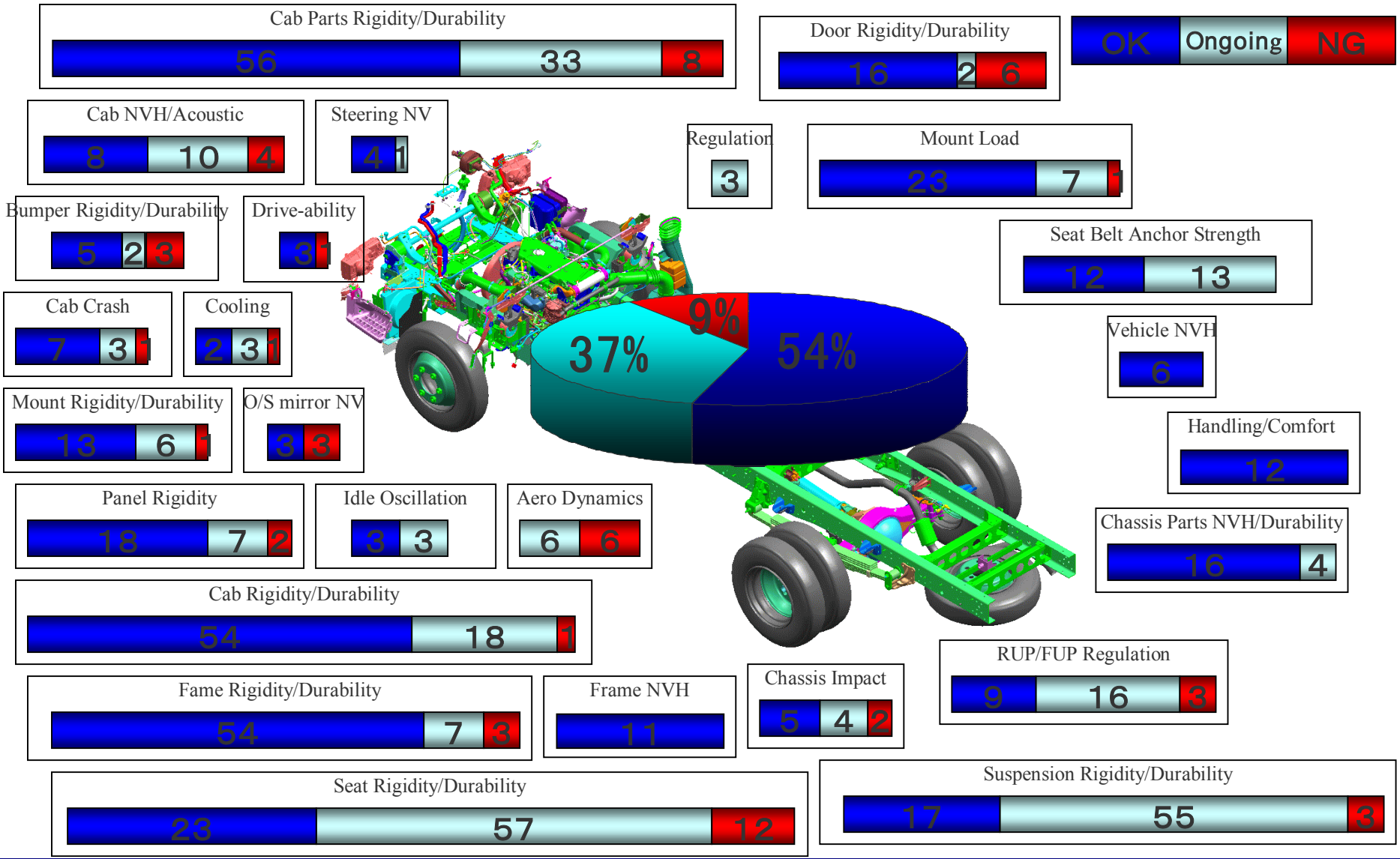




- Meet the Capacity Request

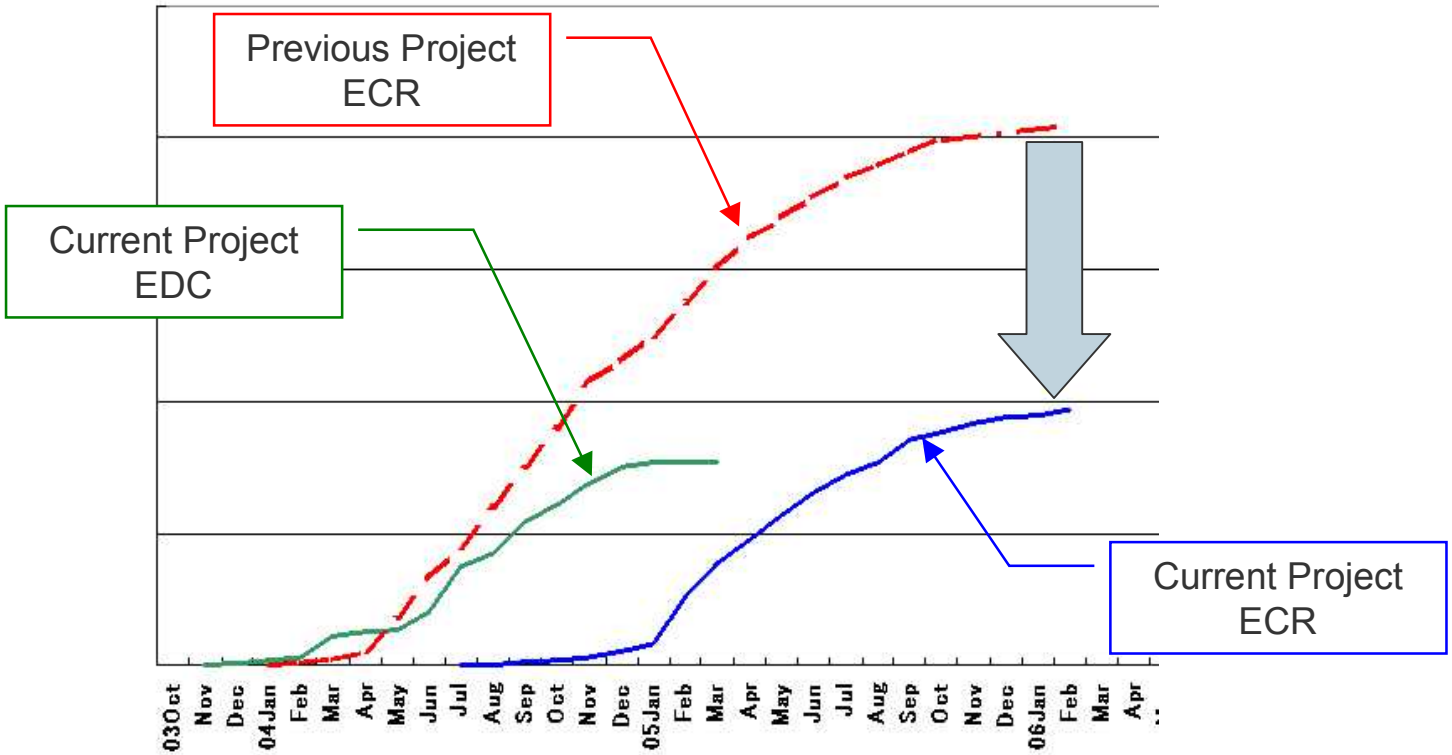


Excellent Quality of the First Real Proto.



Reduce Problem

- Front Loading by EDC
  - EDC:Engineering Design Communication
  - ECR:Engineering Change Request

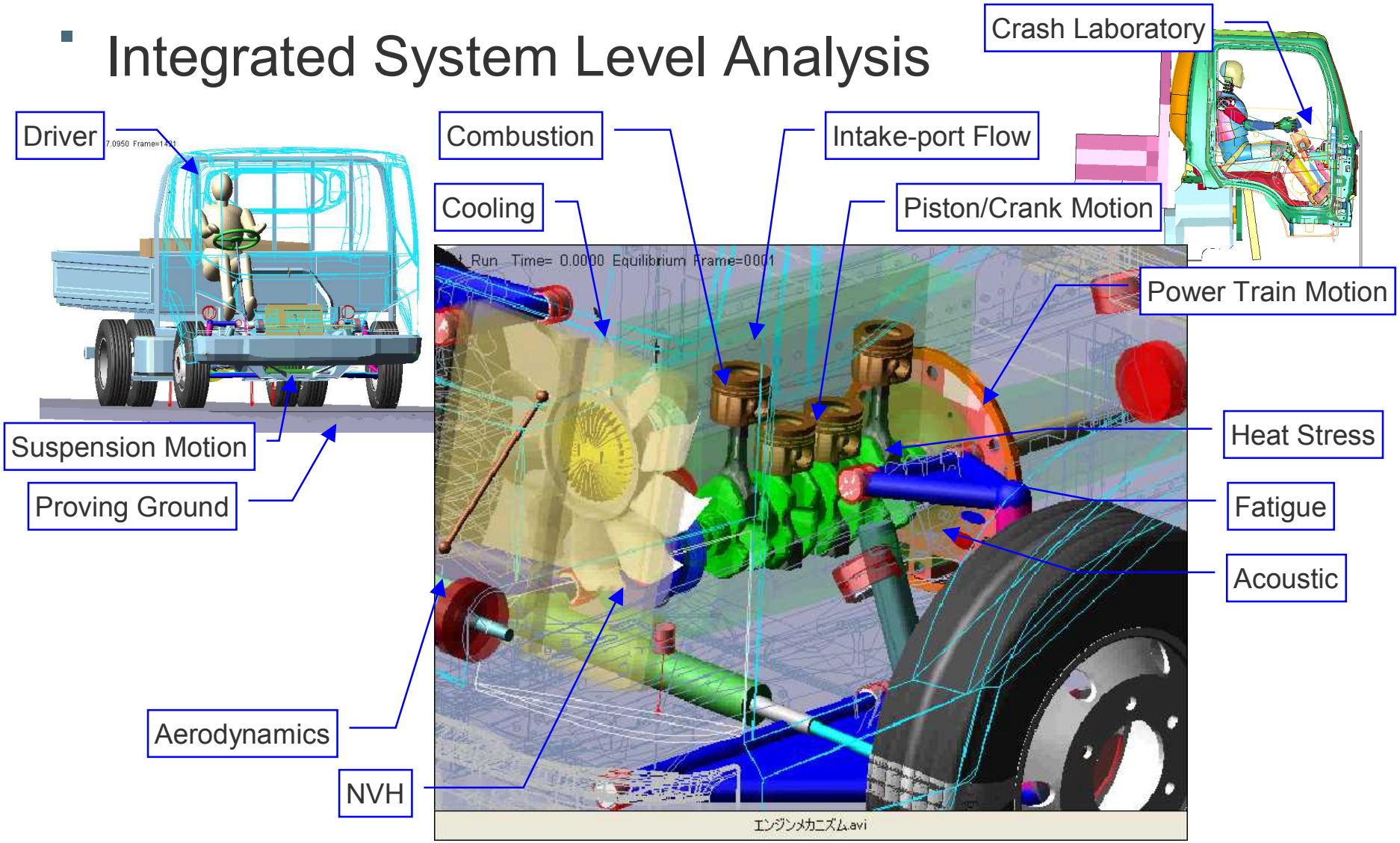


Next Step

- Expand the Virtual Validation
  - Increase Validation Items
  - Improvement Capability Level
  - Integrated System Level Analysis
- Automated Virtual Design
  - Optimization

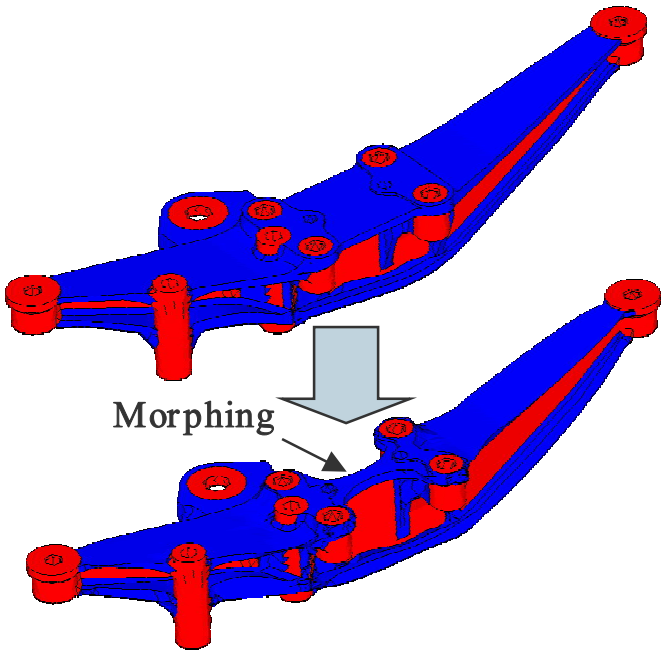
Expand the Virtual Validation

- Integrated System Level Analysis

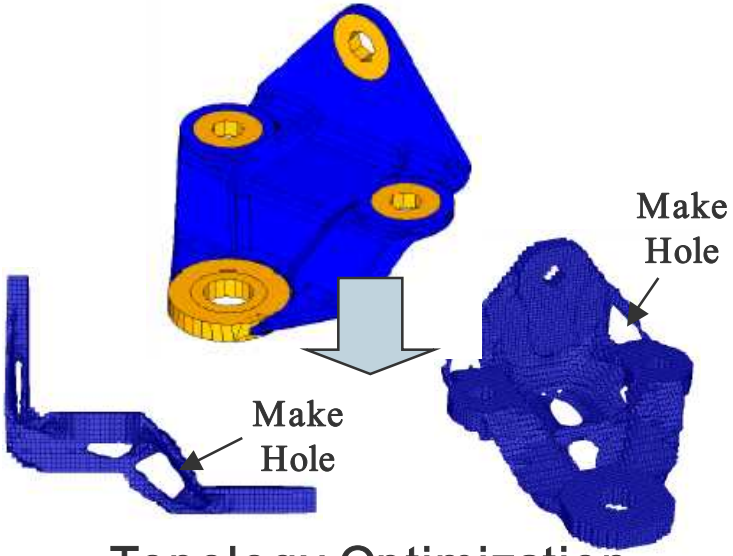


Automated Virtual Design

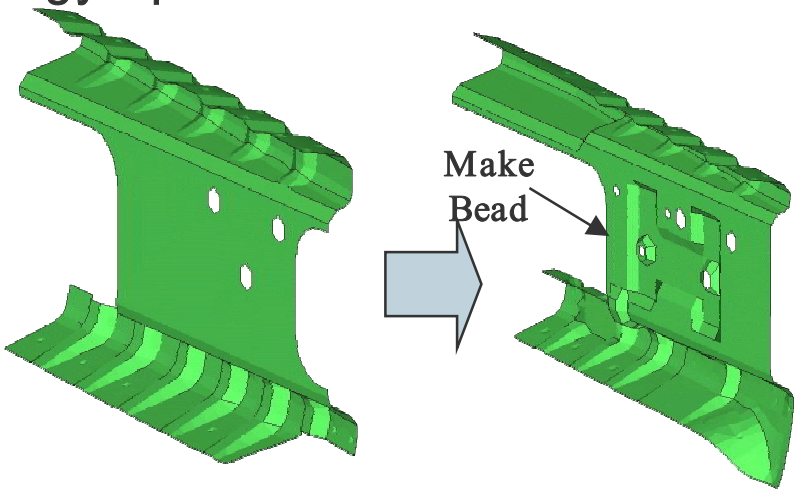
- Optimization



Shape Optimization



Topology Optimization



Topography Optimization

Thank you for listening