

Hyggligt Frequent Integration - Vad innebär det att CEPPSS'a på Scania?

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SCANIA

Premiumprodukter och tjänster



Haulage



Distribution



Special purpos

- Transportutrustning – flyttar människor och gods
- Skapar affärsvärde och vinst åt våra kunder



City and suburban



Intercity and coach



Used vehicles



Engines



124 years of industrial history

- 1891 Company founded
- 1897 First car
- 1900 Scania was established in Malmö
- 1902 First truck
- 1905 First industrial engine
- 1911 Scania and Vabis merge, first bus
- 1921 Bankruptcy
- 1930s Buses main product
- 1934 Last **red** figures
- 1940s New strategy
- 1948 General agent for Volkswagen
- 1950s Exports started
- 1957 Factory in Brazil
- 1964 Factory in Netherlands
- 1969 Saab and Scania-Vabis merge
- 1976 Factory in Argentina
- 1992 Factory in France
- 1993 Factory in Poland
- 1995 Factory in Mexico
- 1995 Independent company
- 1996 Scania a public company
- 2000 Factory in St Petersburg, Russia
- 2008 Subsidiary of Volkswagen
- 2010 New R-series is “Truck of the year”
- 2013 Streamline and Euro 6 full range
- 2014 Full member of Volkswagen Group



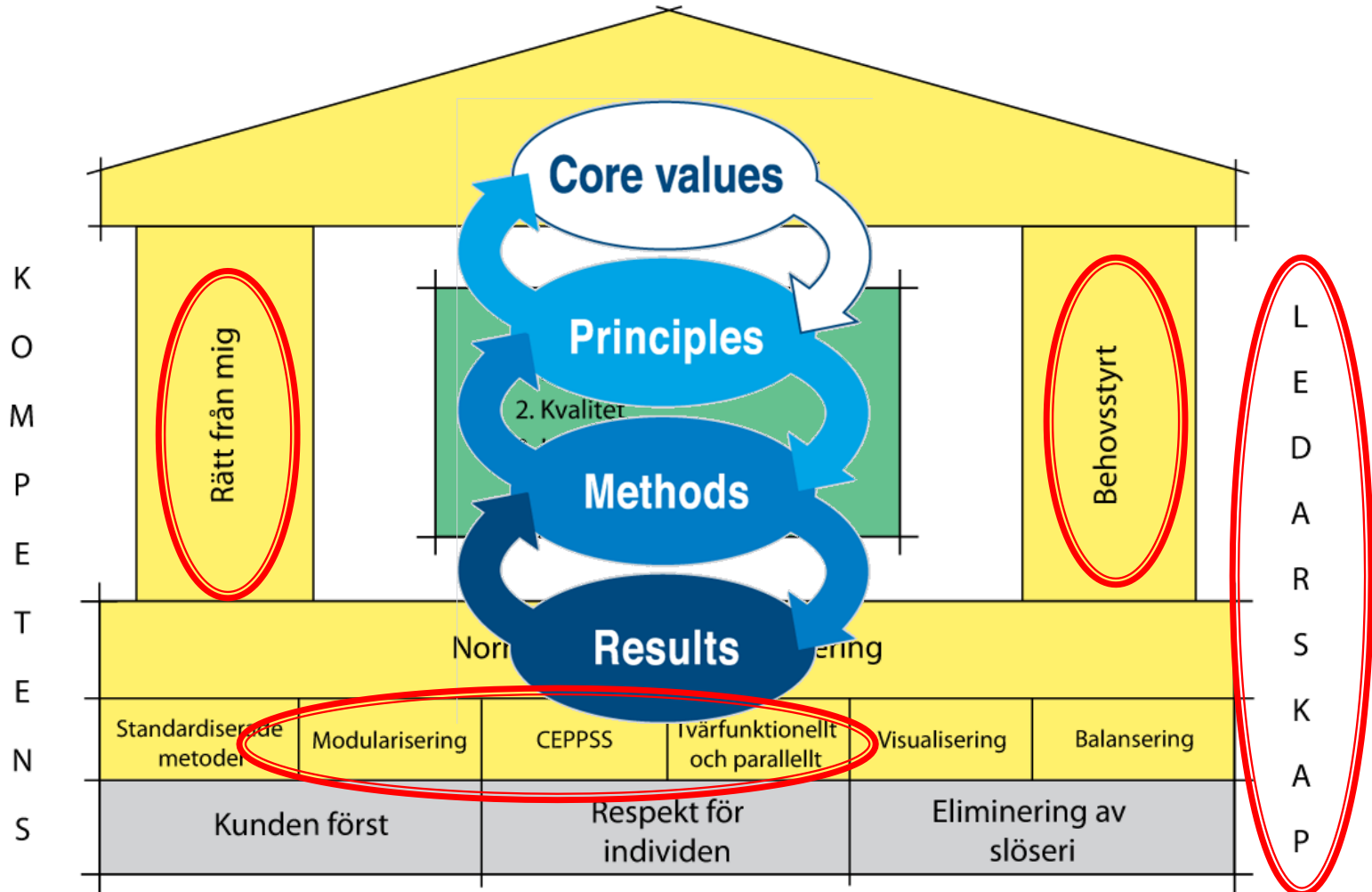


Scania Technical Centre
(”Uppe på berget”)

~3,600 FoU-anställda
~42.000 anställda totalt i 100 länder

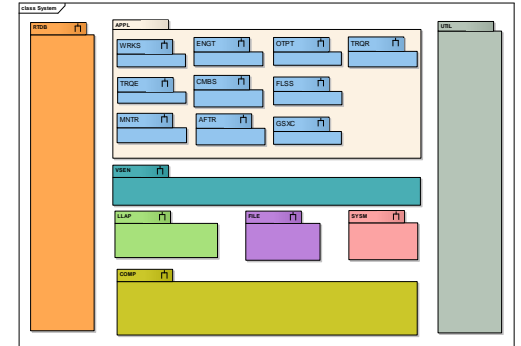
"Huset"

K R E A T I V I T E T

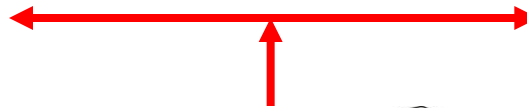


Vad är en ECU?

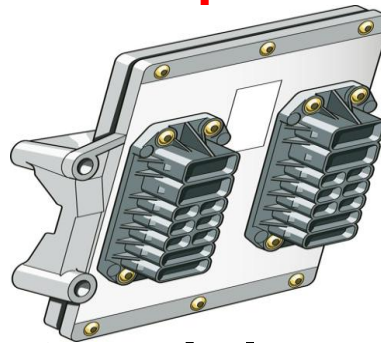
ECU = Electrical Control Unit = Elektronisk styrenhet



Databuss CAN



Insignaler;
givare, knappar,
spakar



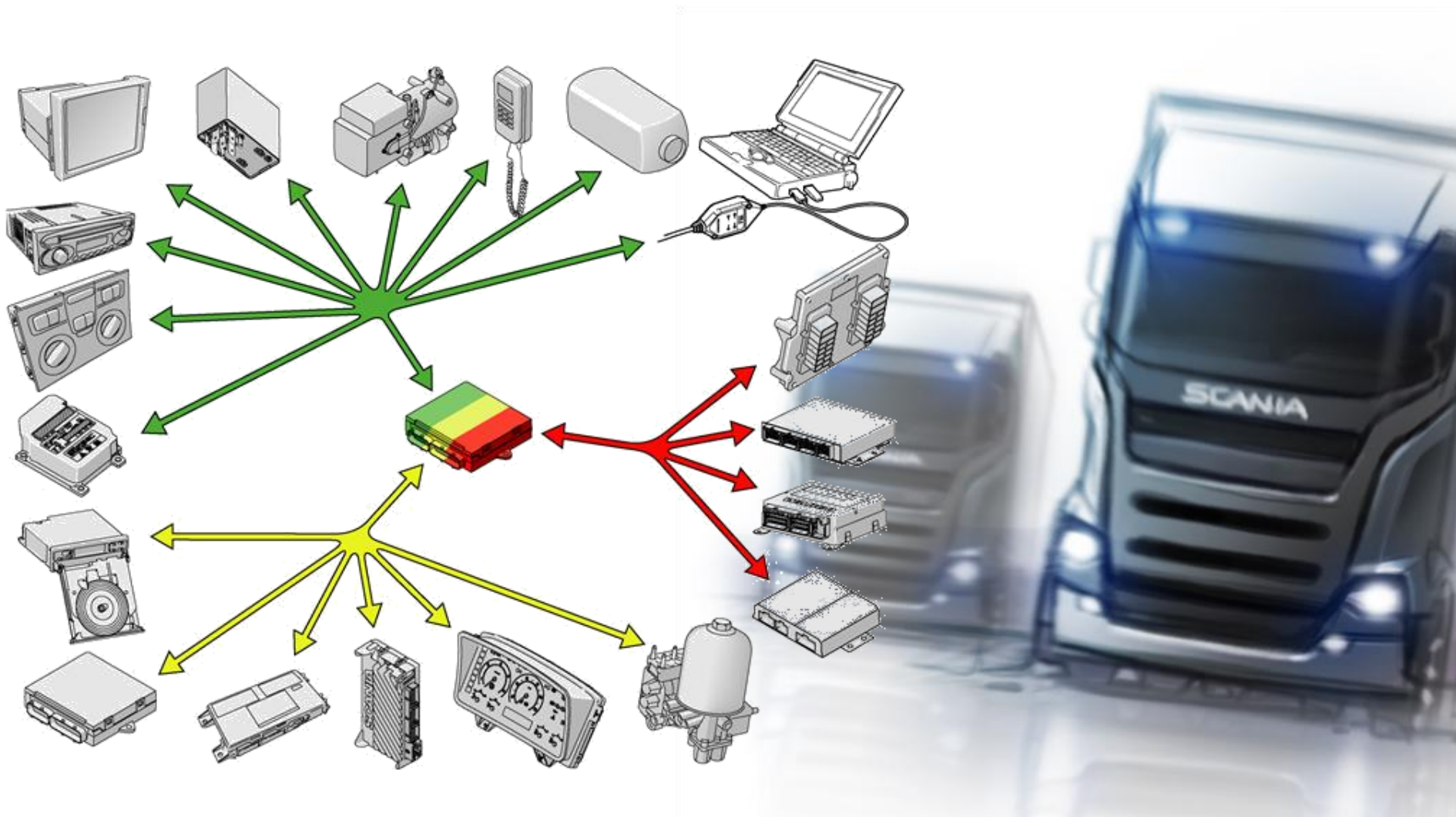
Utsignaler;
lampor, LEDar,
motorer, ventiler

Wake up ("15")

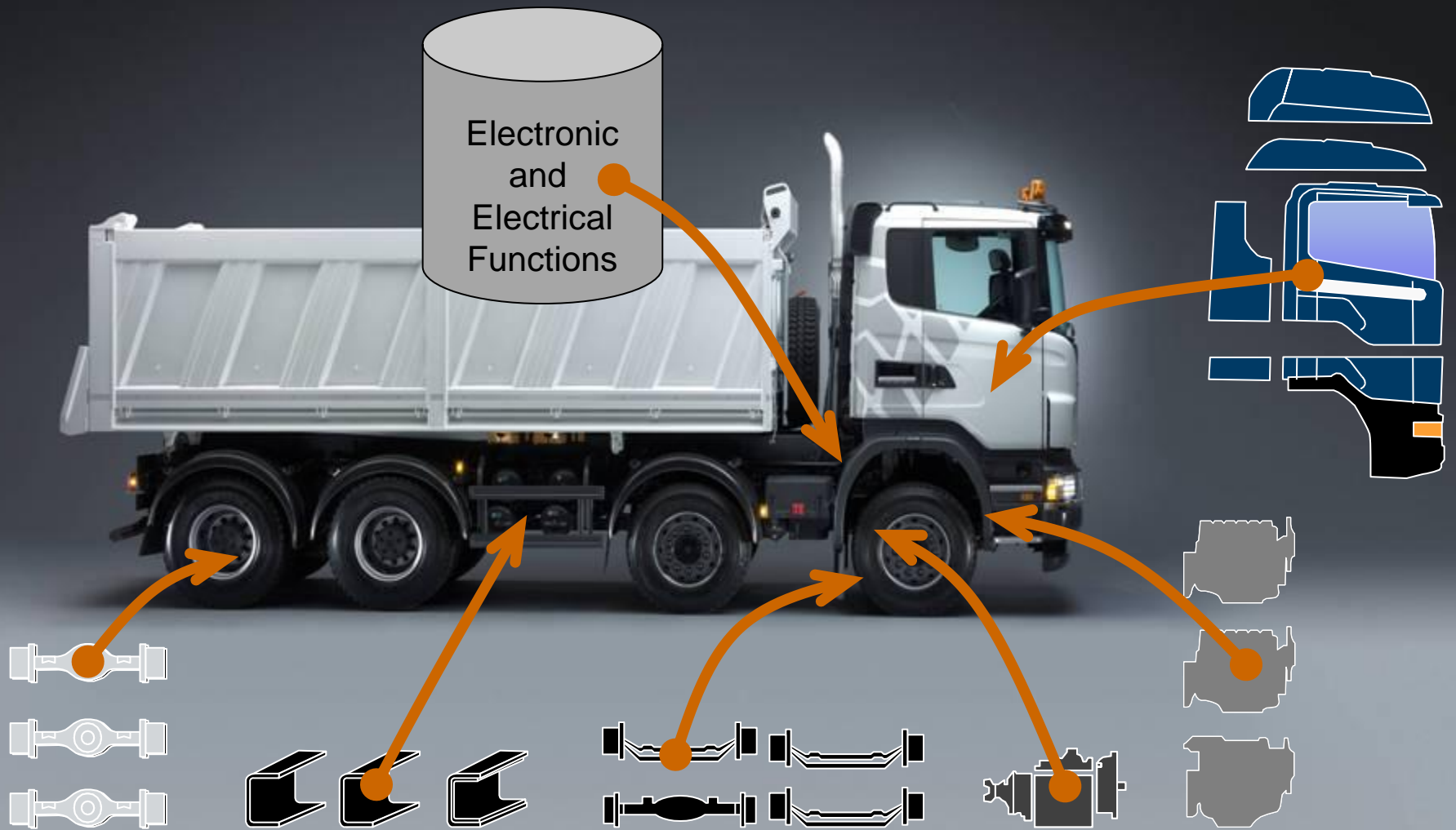
+ matning (Ubat, "30")

- "jord" (GND, "31")

Elsystemet

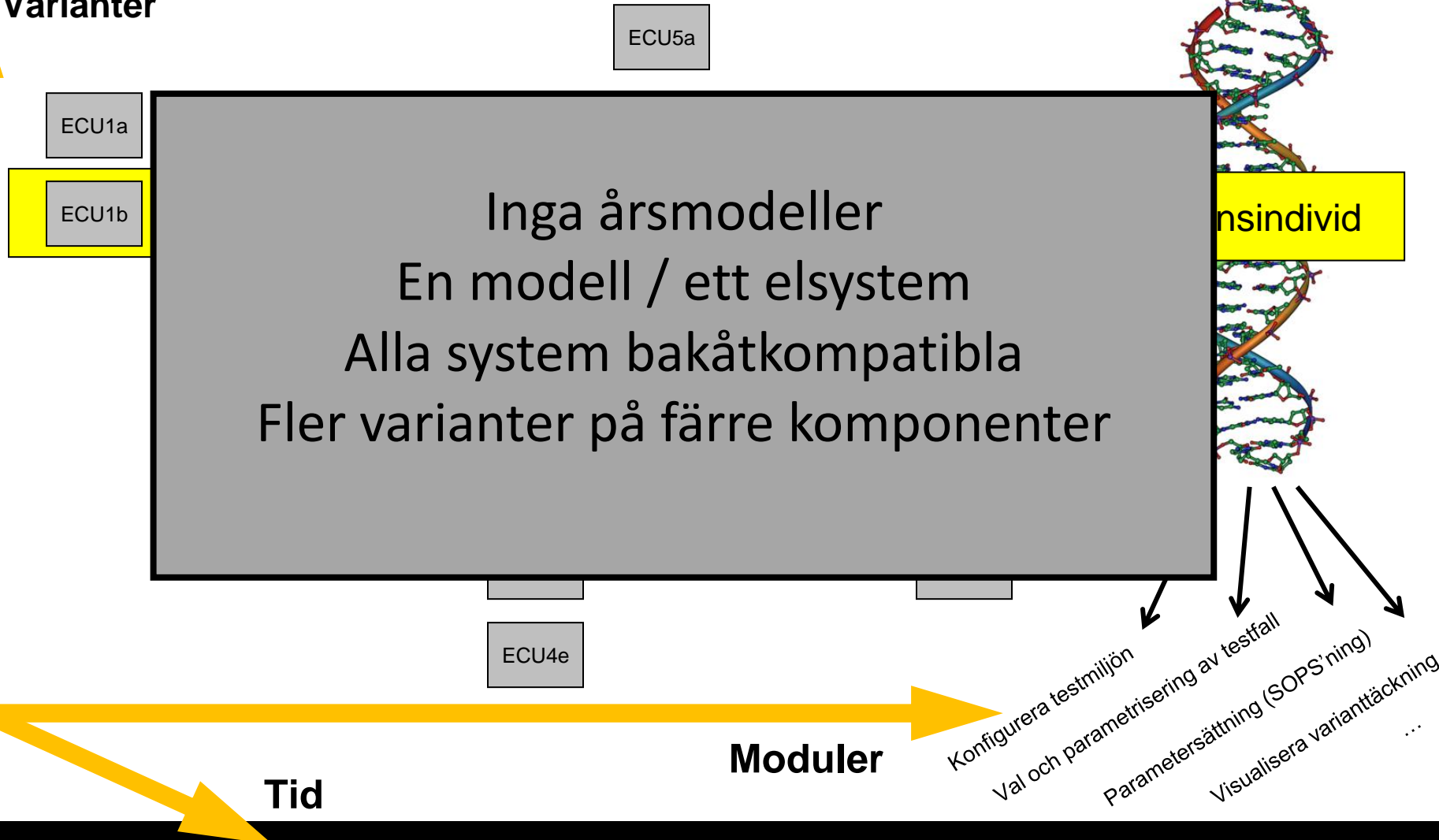


Modulsystemet



Modulär arkitektur

Varianter



Tid

Moduler

Belastningsprov 1908



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SCANIA

Belastningsprov 2015



Allocation Variant

ECU family Variant

Varianttäckning Use Case

Allocation Variant	ECU family Variant
1092 Activate retarder by retarder-lever with TCO with BMS Scania retarder	S6 ABS SIDTCCO RET2 EBS SIDTCCO RET S7 ABS SIDTCCO RET EBS SIDTCCO RET S8 ABS SIDTCCO RET EBS SIDTCCO RET
1093 Activate retarder by retarder-lever with TCO Without BMS Scania retarder	S6 SIDTCCO RET SIDTCCO RET S7 SIDTCCO RET SIDTCCO RET S8 SIDTCCO RET SIDTCCO RET
1094 Activate retarder by retarder-lever without TCO with BMS Scania retarder	S6 ABS EBS RET2 S7 ABS EBS RET S8 ABS EBS RET
1095 Activate retarder by retarder-lever without TCO Without BMS Scania retarder	S6 RET RET2 S7 RET RET2 S8 RET RET2
1096 Activate retarder by retarder-lever with TCO with BMS Non Scania retarder	S6 ABS SIDTCCO ZF SIDTCCO Allison EBS SIDTCCO ZF SIDTCCO Allison S7 ABS SIDTCCO ZF SIDTCCO Allison EBS SIDTCCO ZF SIDTCCO Allison S8 ABS SIDTCCO ZF SIDTCCO Allison EBS SIDTCCO ZF SIDTCCO Allison
1097 Activate retarder by retarder-lever with TCO Without BMS Non Scania retarder	S6 SIDTCCO Allison SIDTCCO ZF SIDTCCO Allison S7 SIDTCCO Allison SIDTCCO ZF SIDTCCO Allison S8 SIDTCCO Allison SIDTCCO ZF SIDTCCO Allison
1098 Activate retarder by retarder-lever without TCO with BMS Non Scania retarder	S6 ABS ZF EBS Allison S7 ABS Allison EBS ZF SIDTCCO Allison S8 ABS ZF EBS Allison
1099 Activate retarder by retarder-lever without TCO Without BMS Non Scania retarder	S6 ZF Allison S7 ZF Allison S8 ZF Allison

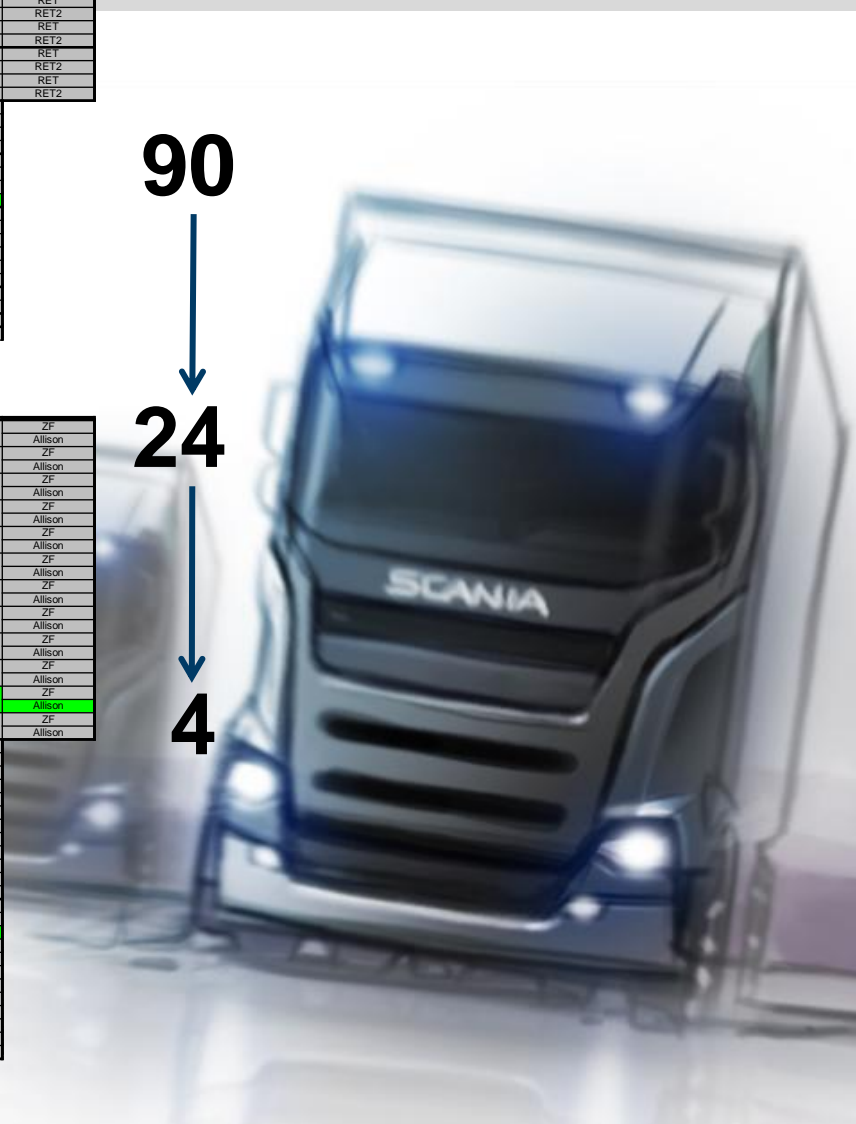
90



24



4



Modularisering och kontinuerliga introduktioner



- Kortare time to market
- Snabbare återkoppling
- Minskad risk
→ högre kvalitet

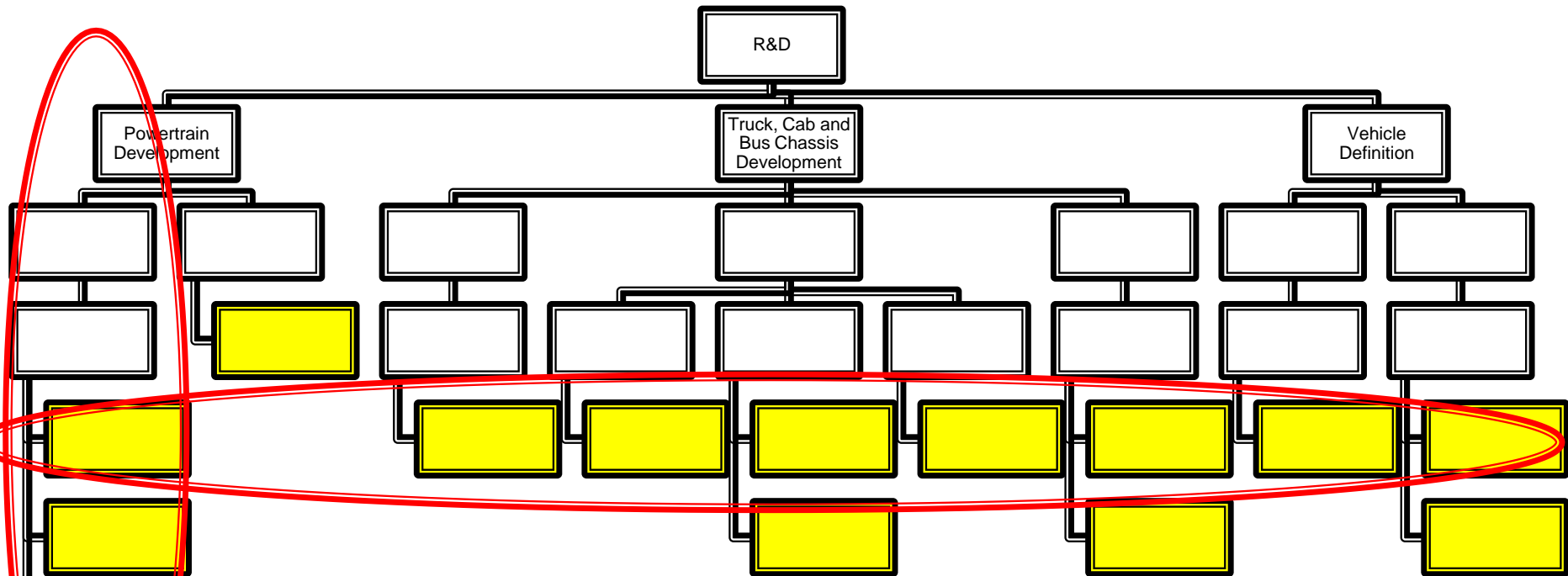
Continuous Evolution of Properties Planned in Small Steps

”CEPPSS”

Plattformsintroduktioner



Organisation



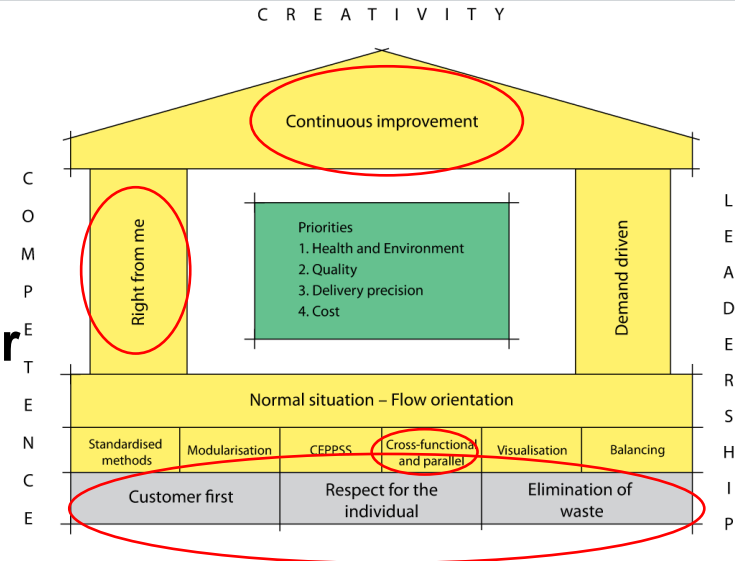
Produktorienterad
organisation

Releaseprocessen +
Funktionsägarrollen



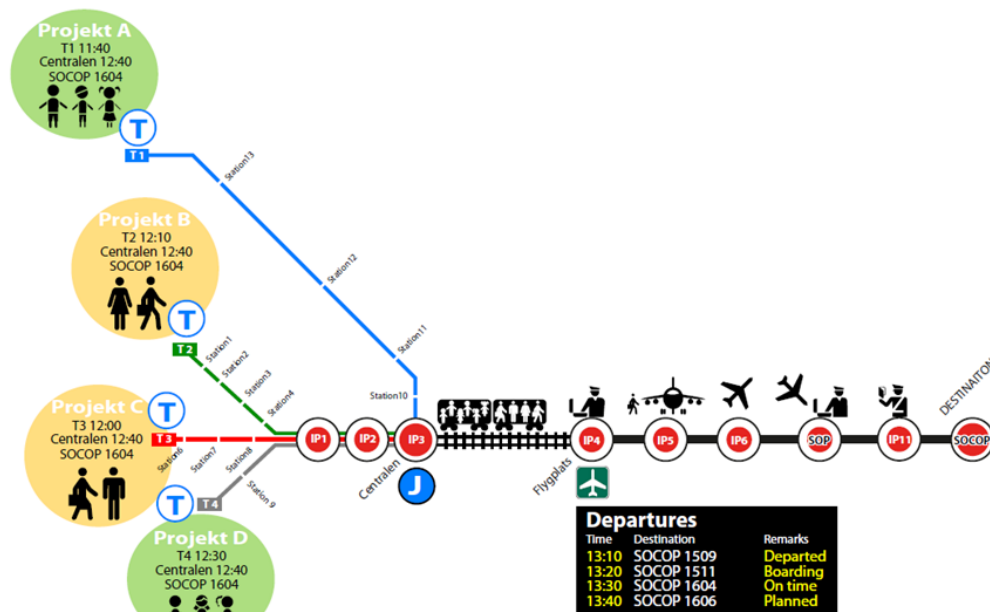
Funktionsägaren

- Äger sin funktion igår, idag och imorgon
- Tvärfunktionell
- Kravställer, parametersätter och validerar



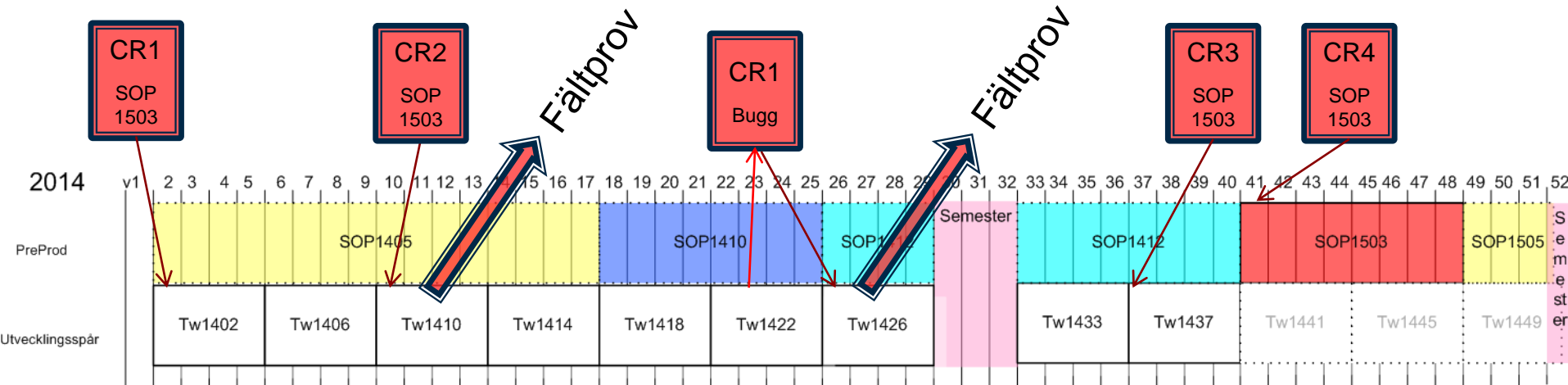
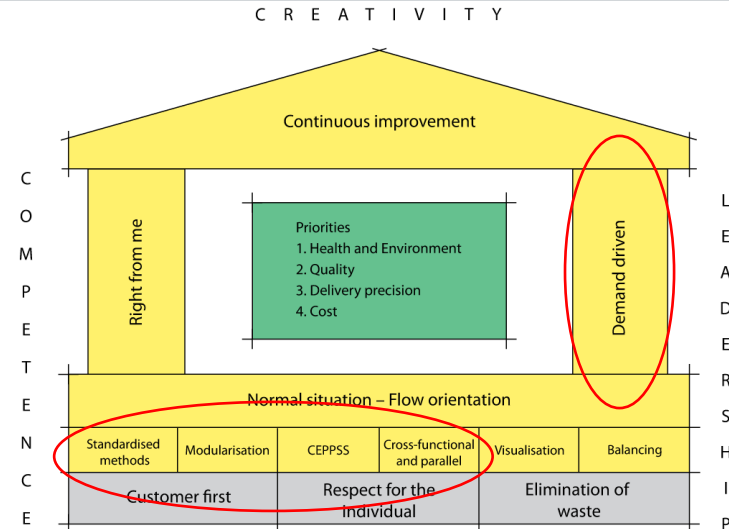
Releaseprocessen

- Behovsstyrd integrationsstart
→ Jämnare flöde för test
- Integrera oftare
→ snabbare feedback
- Integrera tidigare
→ hitta fel tidigare
- Integrera senare
→ stöd sena ändringar och buggfixar



Releaseprocessen

- 4v integrationstakt
- Timebox framför scopebox
- 2 spår – fokus på main
- “Just in Time”-beslut
- Ändringstoleranta lösningar



Fältprov



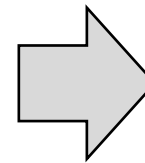
Senare spårbildning

■ Feature toggle

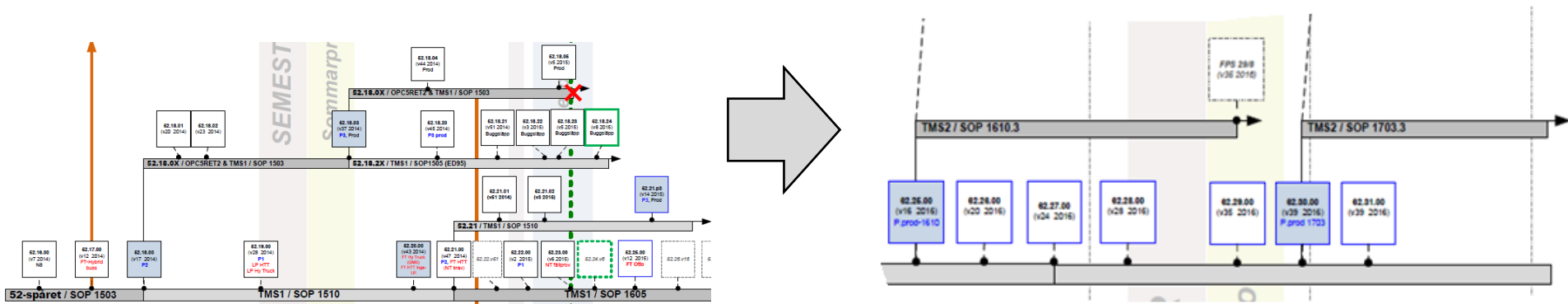
- Strukturerat sätt att låta kod ligga i main utan att påverka kund
- Inget nytt – Parameterstyrd bakåtkompatibilitet använt >10 år

→ Färre releaser / merge

→ Mer tid för djupare test och tid i fordon



Högre kvalitet



Teststrategi?

- **Långsiktig utveckling vs. Kort utvecklingstid?**
- **Kontroll vs. Ansvar**
- **Test i teamet vs. Oberoende test?**
- **Test på R&D vs. Test i fältprov**
- **Test i fordon vs. Test i HIL**

Test by ”Lagom”!





Tack!
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