

Life as LINK-SIC PhD student and beyond

Johanna's view

Johanna Axehill
Product manager
Strategy & Portfolio, BU Gripen
Saab Aeronautics



My background in LINK-SIC

- PhD in Automatic Control 2011
- Iterative Learning Control (ILC), combined with estimation of the robot arm position



YES! I made it 😊

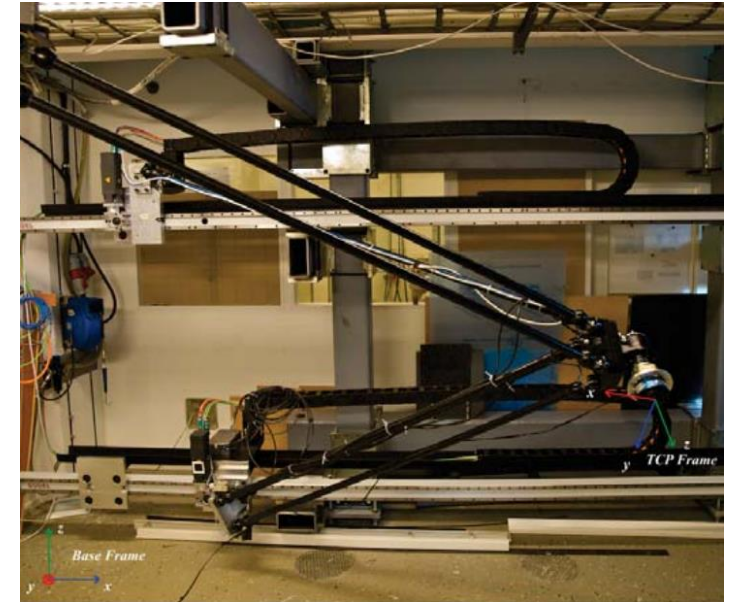
Research overview

Both *theory* and *experiments*

- Analysis of stability and performance
- Experiments at ABB Robotics to motivate the approach
- Estimation-based ILC applied to a parallel kinematic robot at Lund University



IRB 6600 – one of my friends at ABB during the PhD studies



Gantry Tau – another robotic friend in Lund

Life as a PhD student



The community among the PhD students



The experience of teaching has been very valuable in my working life at Saab



Conferences and journeys around the world



Valuable "visits to the real world", what is important in industrial applications

My takeaways from the LINK-SIC years

The difficulties of practical problems are often underestimated...

Connection to practice

- Academic & industrial aspects of research and development

The importance of simplicity

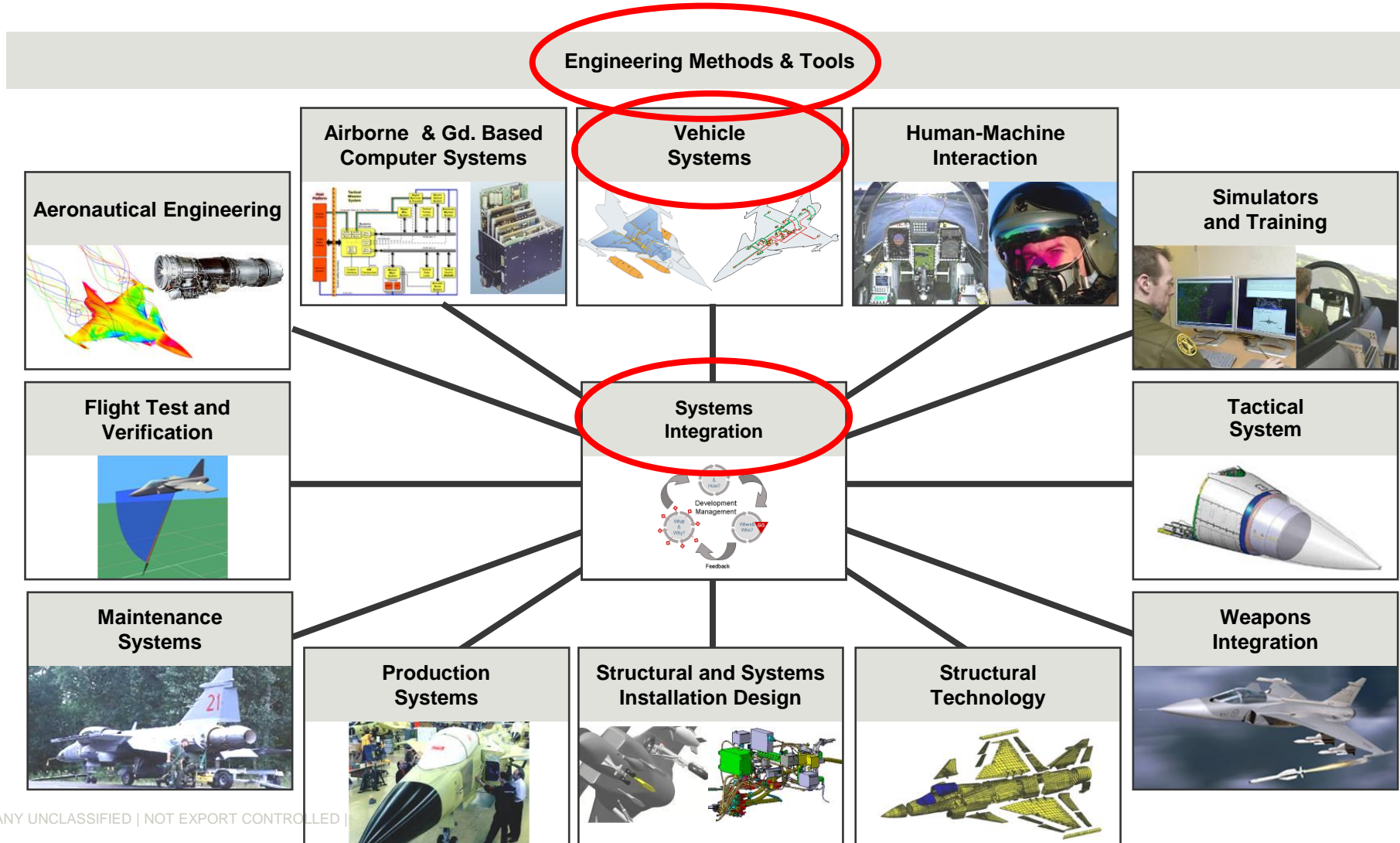
- Great value in solving the problem in the easiest possible way

Systems integration

- The hardest problems to solve are often *not* the technical details, but to *make things work well together*



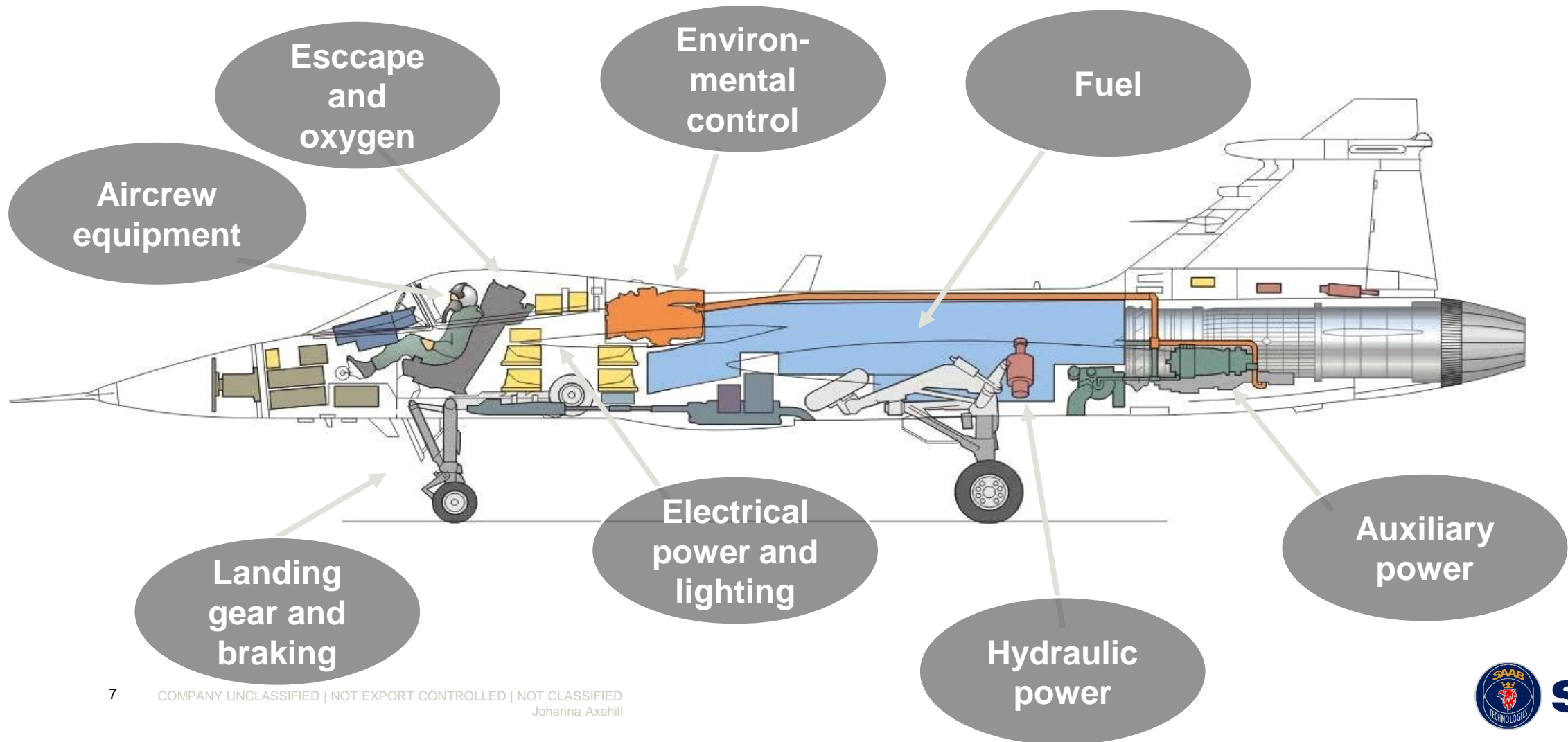
My place at Saab Aeronautics



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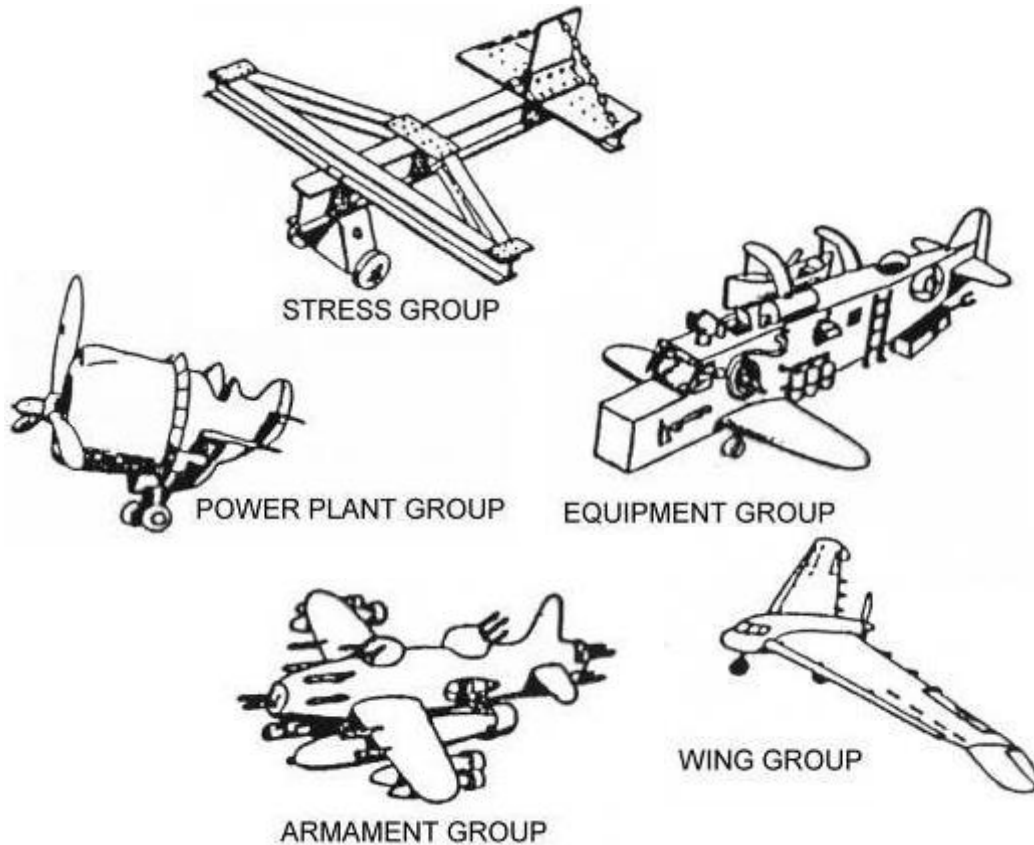


My role: Product manager for vehicle systems and aircrew equipment



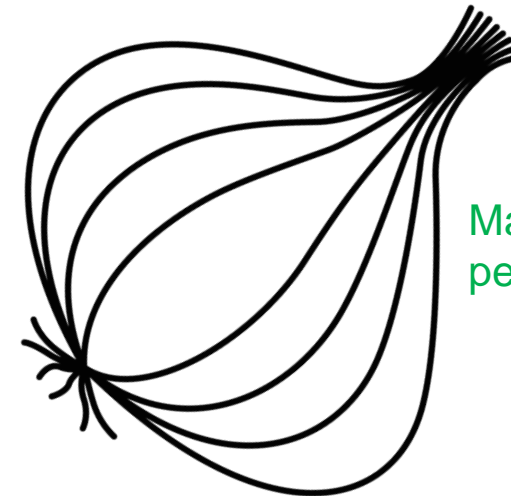
But also: Part of the Strategy & Portfolio group, BU Gripen – overall perspective

Want to avoid this...



Strive for achieving this...


- A **viable** product for decades – **long-term** view
- Understand and realise **product capability** together with the acquirer/customer
- **Mature** new technologies, **prepare** for next platform
- Handle **obsolescence**
- Maintain **organisational capability** over time



Maaaaaany different perspectives...!

Systems engineering & technical leadership



(Industrial publications for International Council on Systems Engineering – INCOSE)



29th Annual INCOSE
international symposium
Orlando, FL, USA
July 20 - 25, 2019

Experience from a Program for Accelerating the Creation of T-shaped Technical Leaders


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Perspectives on Models

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Heterogeneous System Modelling in Support of Incremental Development



Heterogeneous Systems Modelling in Support of Incremental Development

Robert Hallqvist, Johan Naeser, Johanna Wallén Axehill, Erik Herzog


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33rd Annual INCOSE
international symposium
hybrid event
Honolulu, HI, USA
July 15 - 20, 2023

Boxing Configuration Management – Configuration Change Management Meets the 4-Box Development Model

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31st Annual INCOSE
international symposium
Honolulu, HI, USA
July 17 - 22, 2021

From Brownfield to Greenfield Development – Understanding and Managing the Transition

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32nd Annual INCOSE
international symposium
hybrid event
Detroit, MI, USA
June 25 - 30, 2022

Don't Mix the Tenses: Managing the Present and the Future in an MBSE Context

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Brownfield development

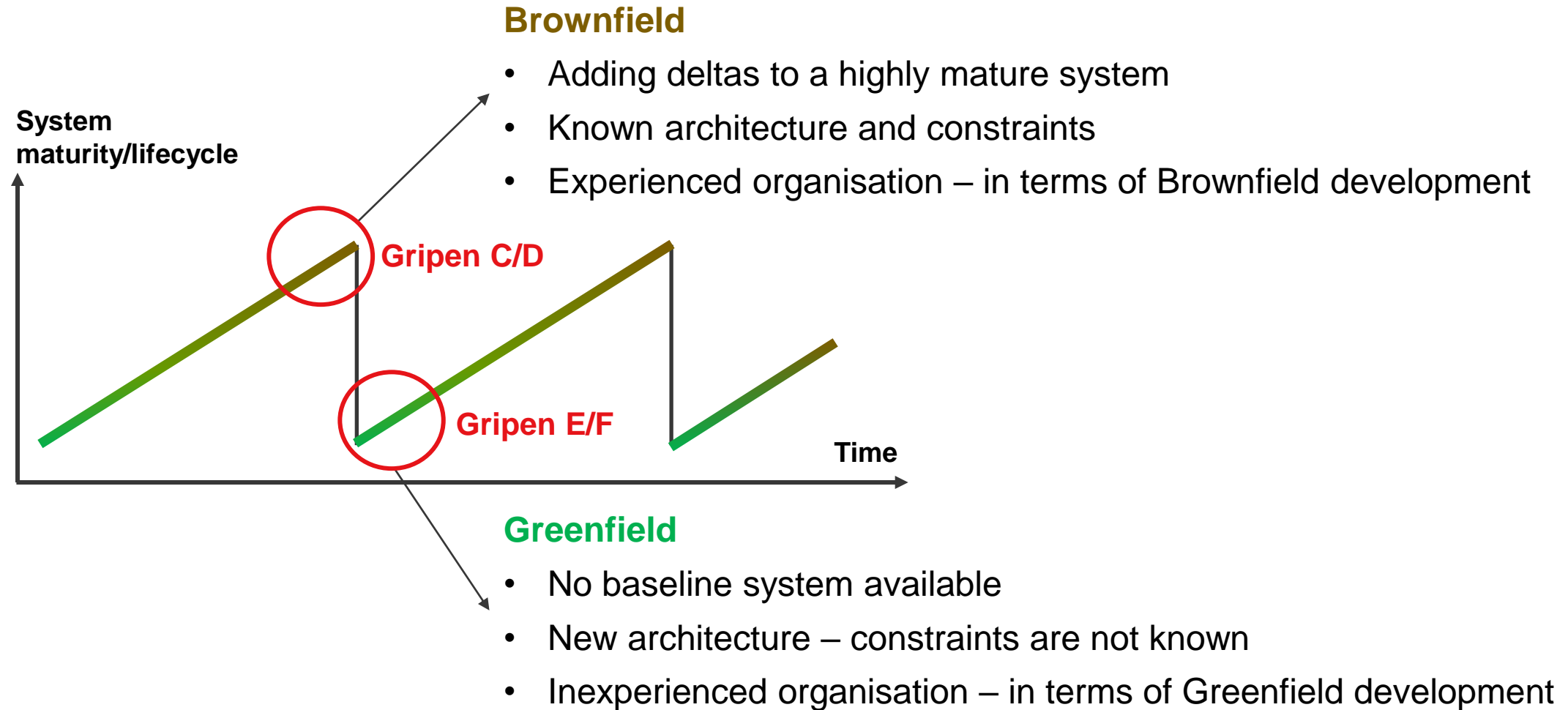
Adding new capabilities on an existing platform – *based on prior work* or to *rebuild* a product



Greenfield development

Creating a new platform
from scratch – *lacks*
constraints imposed by
prior work

Brownfield vs Greenfield development



THANK YOU!

