

# Catching the wave

How do we find enough rail systems people?

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# The perfect wave?

Crossrail  
LU Upgrades  
Electrification  
IEP  
ERTMS  
HS2...



We want to contribute to the success of these projects

# How do we find enough rail systems people?

Rail systems people?

Anyone taking a system-wide view of projects

Enough?

The minimum resource/cost necessary to restrict the risk of systems problems to an acceptable level

Find?

Within rail, from traditional disciplines

From other domains, for transferable skills

New entrants from the education system

# How do we ride the wave?

Like a good surfer, the rail SE community requires:

- Skill
- Stamina
- Balance
- Agility
- Flexibility
- Timing



# Our Strengths

Need for SE accepted

Body of knowledge

Experience

Domain knowledge

Industry presence

Established supportive community (RIG)





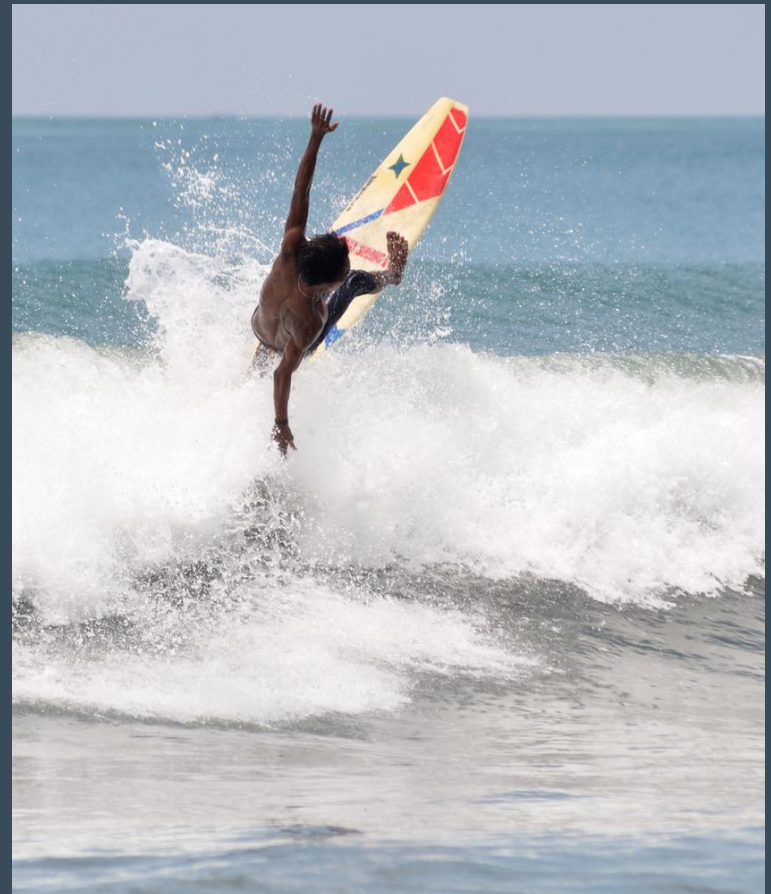
# Our Weaknesses

Small community

Reliance on experienced people

Poorly integrated with the wider rail engineering community

Inward-looking?



# Opportunities

Evidence that System Engineering is essential for successful projects

Embed System Engineering principles into the “day job” - share values and integrate with wider community

Embed domain expertise into System Engineering

Develop the System Engineering community

# Threats

Amount of work and competition for resource

Diverse standards and processes

Resistance to integration

Competence

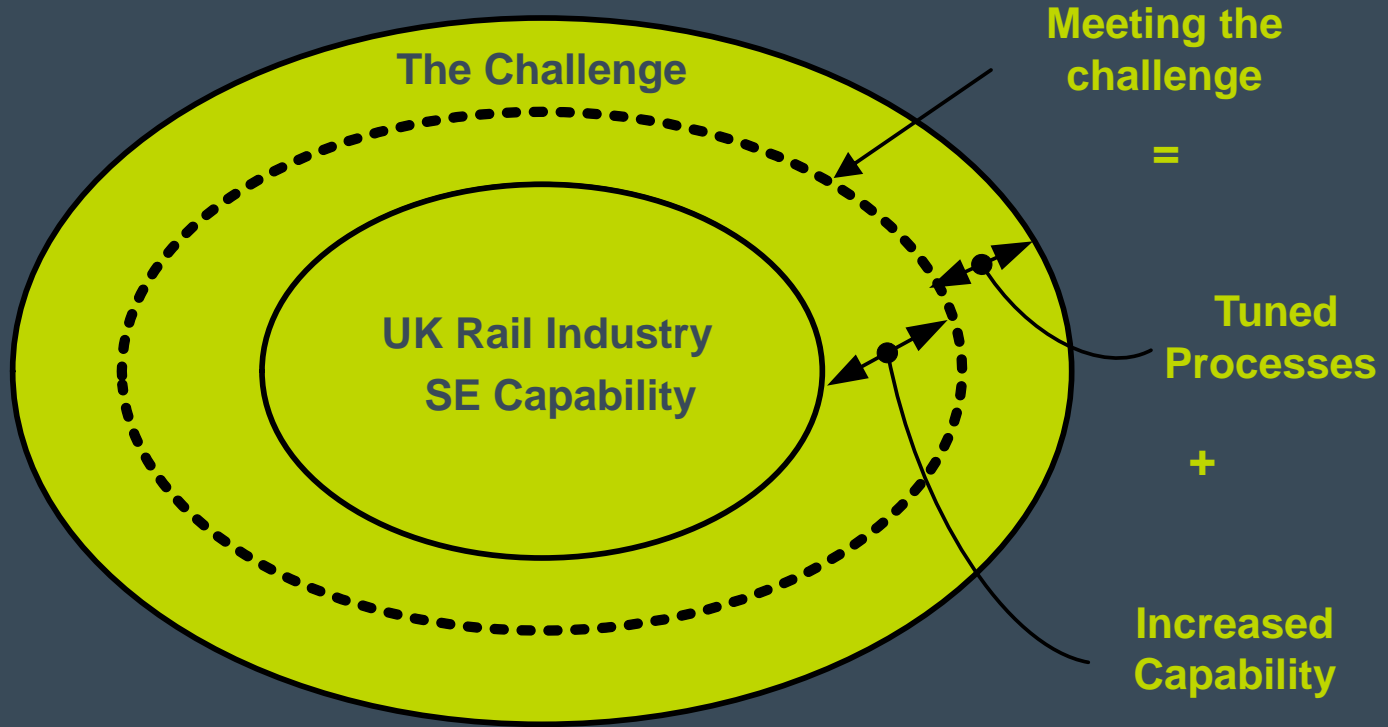
Contractual structures

Feast and Famine





# Match demand and supply



# Conclusions

We are resource limited:

- Don't rely on a large influx of raw talent
- Draw on resource from the rail community
- Avoid over-commitment of experts

We need to become better integrated:

- Engage with the wider rail community
- Work within project teams, not as isolated specialists
- Embed SE into everyday project processes

We should use our influence at all levels of supply chain to:

- Enable movement between projects
- Promote risk based tailoring of SE processes

