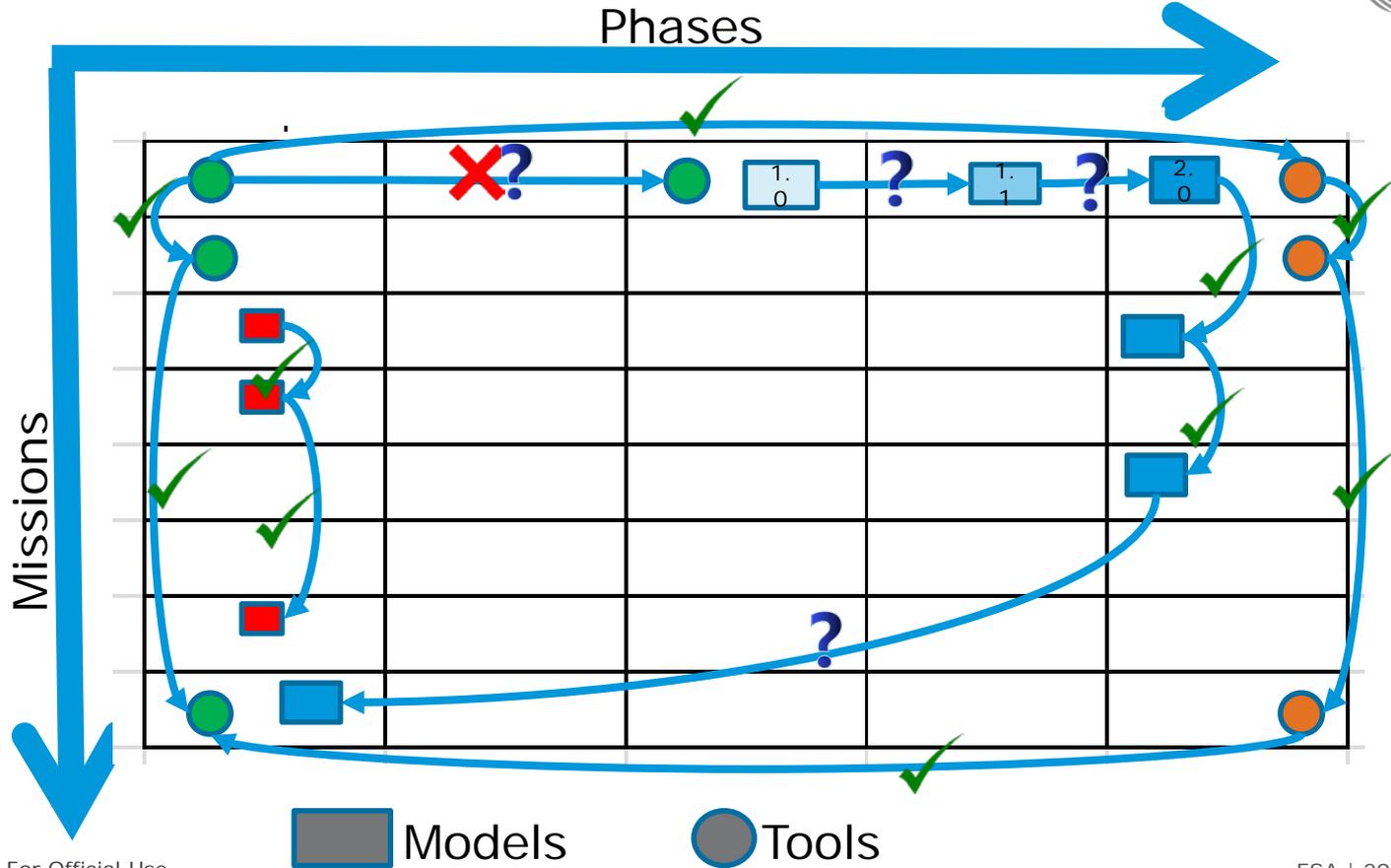


**ESOC**

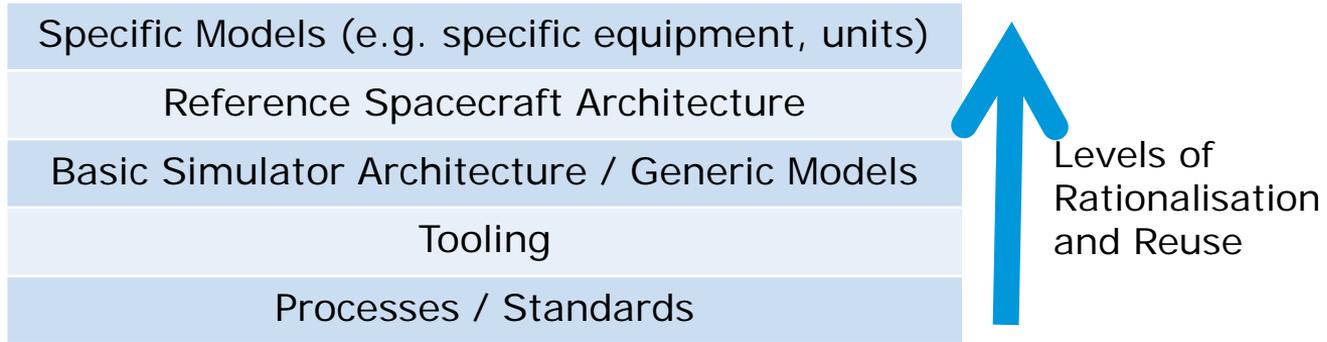
**RATIO-SIM Position**



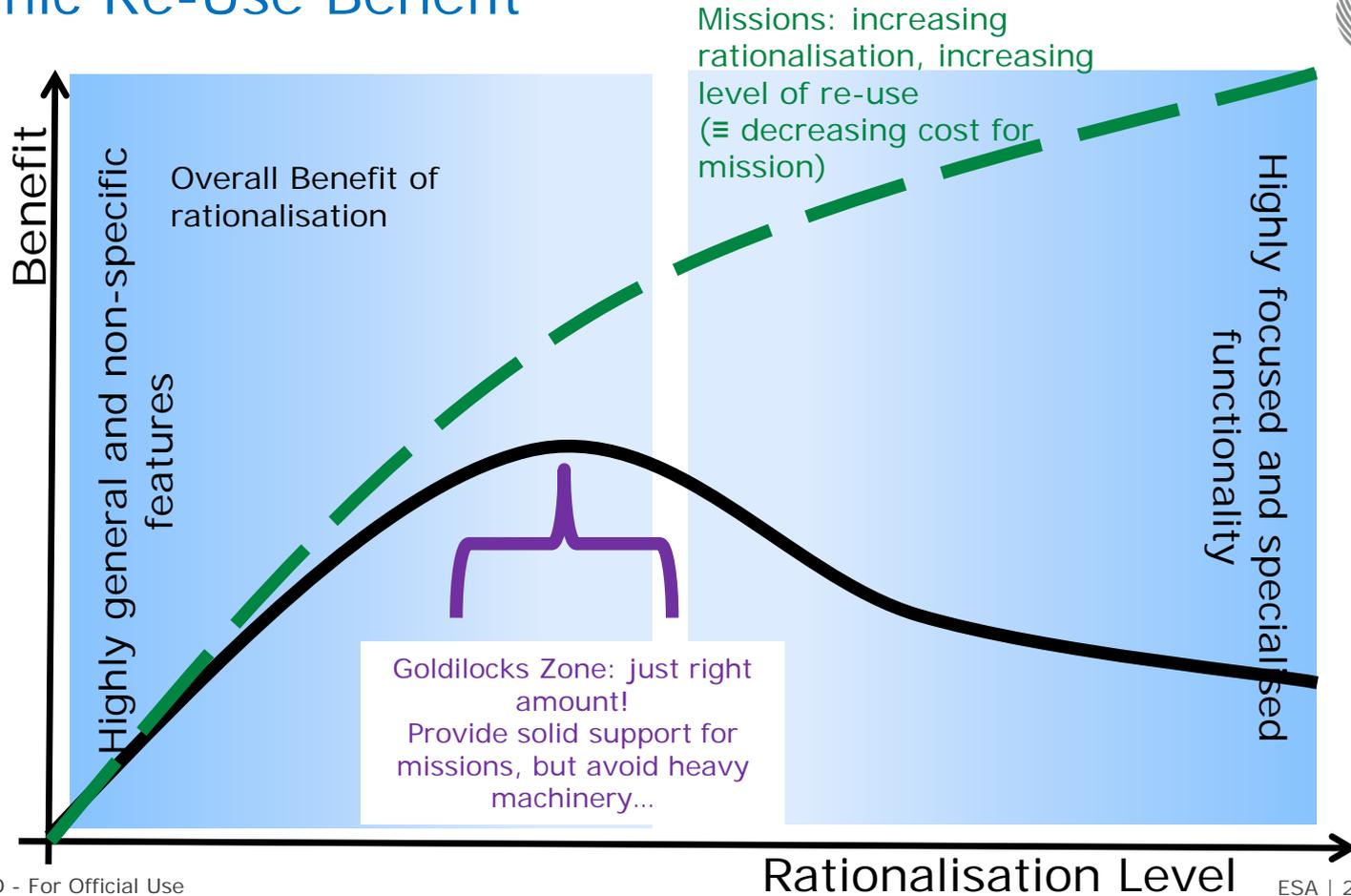
# Re-Use Possibilities



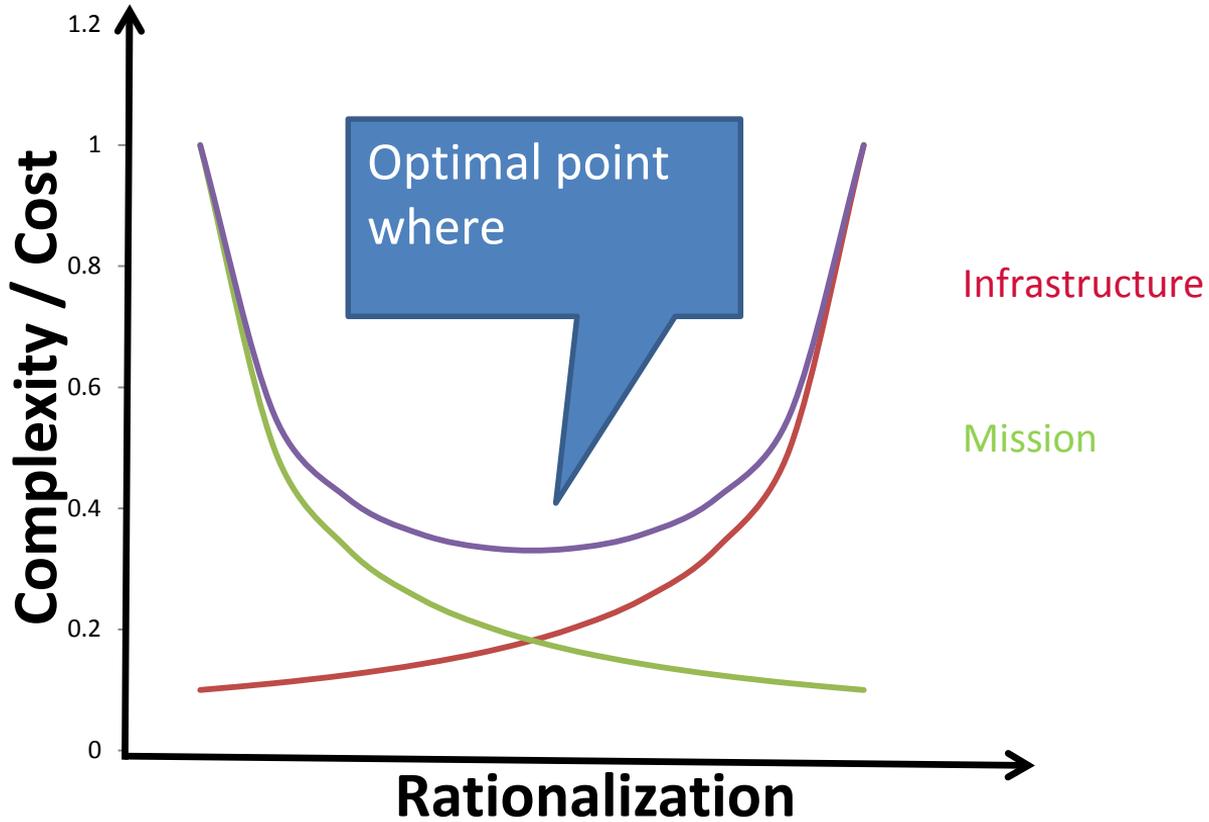
# Levels of Reuse...



# Economic Re-Use Benefit



# Re-use benefits



# Statement/Position (1/2)



**Rationalization brings demonstrable benefit between missions at the same phase, up to Reference Architecture level**

Current status: What are the major bottlenecks maintaining or replacing the Modelling and Simulation Infrastructures?

- Technical Investment in Infrastructure Toolsets / Technical Skillset transfer
- Legal aspects... for tooling and modelling, licensing is an issue, but understood
- For Models, NDA/commercial confidentiality, responsibility etc. is not clear
- Model reuse across missions largely in place (but typically within 'Suppliers')
- Reuse of specific across project phases is still inefficient
  - Incentivise Model Producer (to deliver something reusable efficiently)
  - Make re-usable models available 'across organisational boundaries'

Common interest: are the European Industry (Primes and SMEs) willing to work towards a harmonised Modelling and Simulation Infrastructure?

- 'Optimal' level of rationalisation should be identified/agreed and then 'pursued' at programmatic level in the long term by all stakeholders
  - Convergence on tools should in principle be simplified by the adoption of a common standard (SMP) but current it isn't. Is there any good reason?
  - Re-use of models can only be effective in the presence of an agreed Reference Architecture and if the model supplier is 'motivated' to make it re-usable



# Statement/Position (2/2)



Approach: What are the next steps that need to be taken to work towards a harmonised Modelling and Simulation infrastructure?

- There is a definite need of Rationalisation, in particular in the area of tooling and general infrastructure support. Too much Rationalisation is however as bad as no rationalisation at all
- Whole scope should be assessed but then efforts shall be concentrated on some concrete steps
- Governance/management of shared tools to be agreed: a) ESA / ESA Lead Organisation b) Open Source c) Open source Framework, commercial plug – ins (models?)

