

# Empirically Driven Communications Systems Research?

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# What do we want?

- The “ilities” of empirical net research:
  - Repeatability: Reproduceable results
  - Plausibility: Realistic results
  - Comprehensibility: Predictable results
  - Scalability: Relevant results
  - Programmability: Affordable results
  - Flexibility: Contrasting results
- The tension between all the above:
  - Multiple test beds
  - Specialised Testbeds
  - Virtualized Testbeds
  - Traces to drive testbeds

# What will we get?

- Require all testbeds to archive
  - Metadata to describe testbed, protocols, source model, traffic matrix/workload etc
  - Published traces for comparisons
  - Including real network traces
- Require testbed to define a Federation APIs
  - For composing larger testbeds
  - especially between wireless and wide area wired.

# How will we get there?

- In the UK, we have allocated capacity on SuperJANET of 5 + sites at 10Gbps (a lambda)
- We have defined Hen and a SAN for traffic generation and traces
- We are looking at injection of real traffic from operational net onto this
- We are looking at connecting it on (surrounded by experimental wireless and local emulation systems) - c.f. Glasgow, St Andrews, Lancaster, Cambridge, UCL et al