

# Study of an ESA Space Weather Programme

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#### WHO ARE WE?

- Central Laboratory of the Research Councils (CCLRC)
  - Space Science & Technology Department (at RAL)
- UK Defence Evaluation and Research Agency (DERA)
  - Space Department (Farnborough)
  - Radio Science and Propagation Group (Malvern)
- Astrium, UK
- Finnish Meteorological Institute (FMI)
- Office National d'Etudes et de Recherches Aérospatiales
  - Département Environnement Spatial (ONERA-DESP)
- Belgian Institute for Space Aeronomy (BIRA)



#### **KEY PEOPLE**

- CCLRC Mike Hapgood
- DERA Lesley Murphy
- Astrium Martyn Snelling
- FMI Hannu Koskinen
- ONERA/DESP Daniel Boscher
- BIRA Daniel Heynderickx



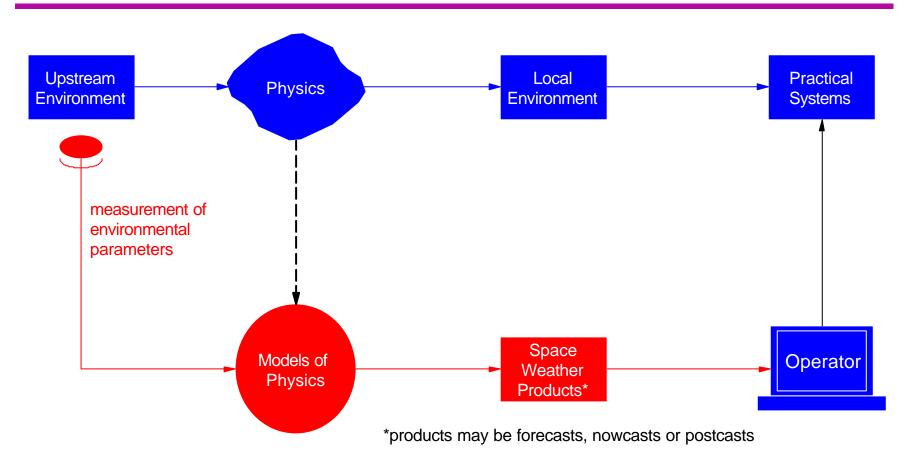
#### STUDY WEB SITE

http://www.wdc.rl.ac.uk/SWstudy/



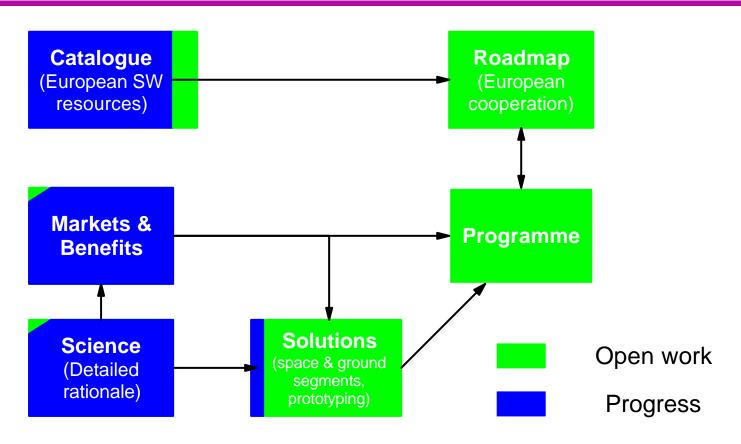


## CONCEPTUAL S.W. SYSTEM





### **STUDY FLOW**



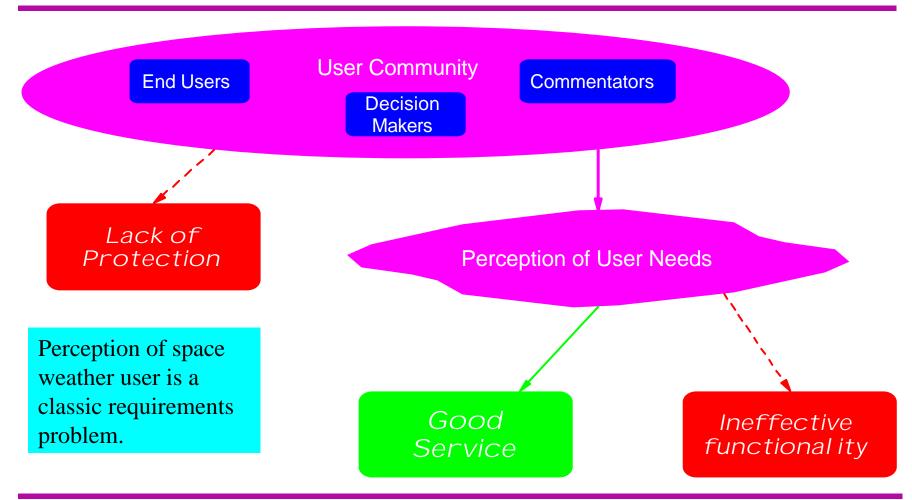


### AIM FOR TODAY

# IMPROVING UNDERSTANDING OF USER REQUIREMENTS

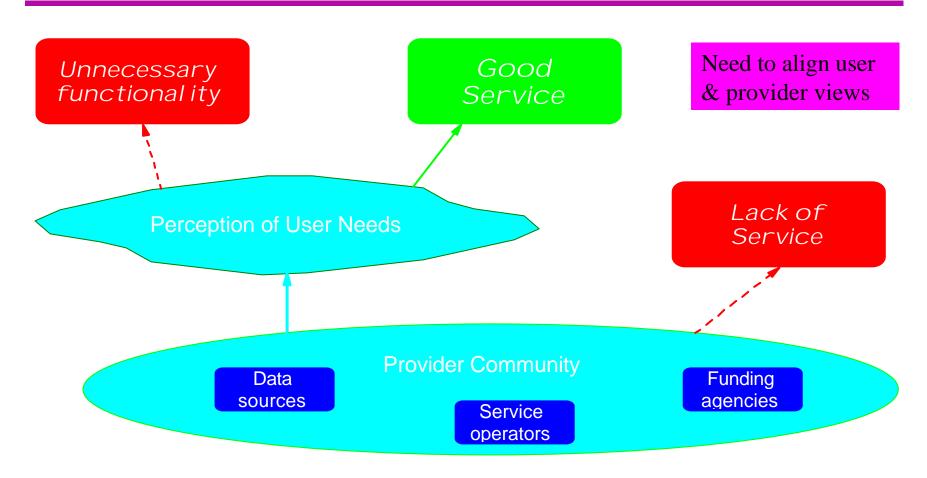


## USER VIEW OF NEEDS





### PROVIDER VIEW OF NEEDS





### **SOME THOUGHTS**

#### Strengths

- Science & measurements
- History of collaboration
- Micro/nanosat programmes
- Geographic spread of facilities

#### Weaknesses

- Access to small launchers
- Provision of services is fragmented (dates from IGY 1957)

#### Opportunities

- Collaboration with US, Japan & others
- SMEs as service providers
- Niche areas for services
- Focus for research

#### Threats

- US competition
- Bandwagon for other interests