



Belgium@SSA

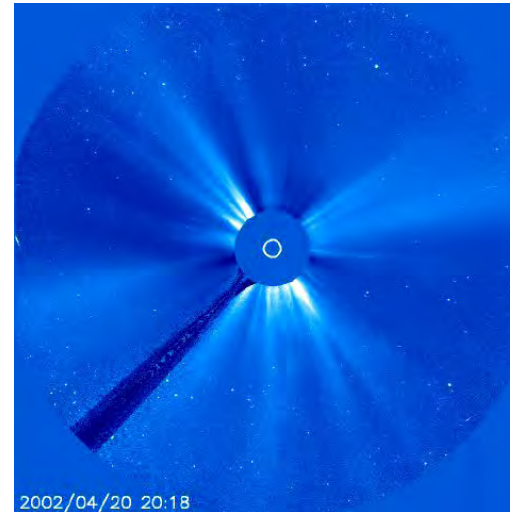
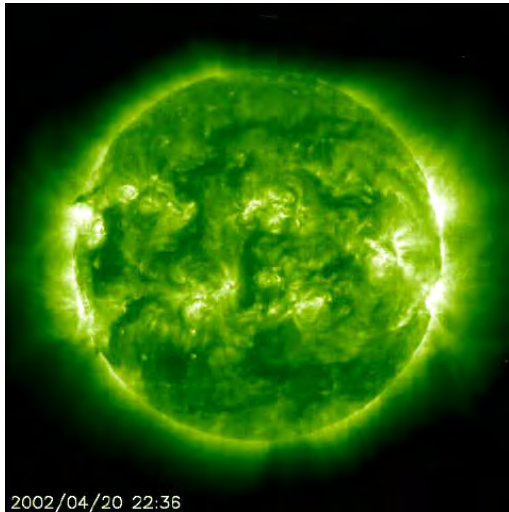
## Belgian background for the Space Weather segment of SSA



# Space Weather



- the variable conditions in space,
- with a particular interest in the environment of Earth in space
- includes ionising radiation, magnetic perturbations, plasma clouds and energetic particles
- mostly originates from solar variability
- leads to geomagnetic & ionospheric storms, radio black-outs, proton storms ...



# Space Weather and Security

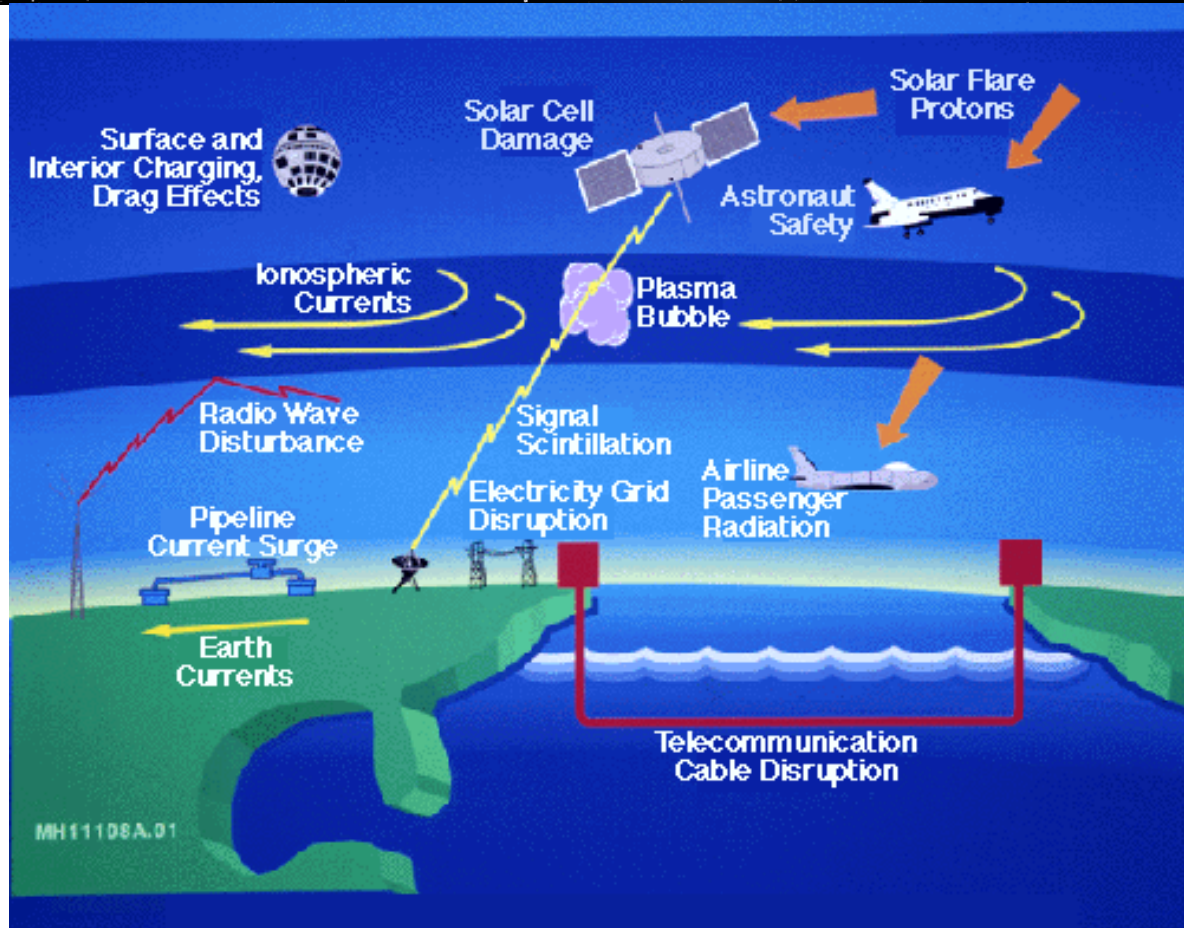
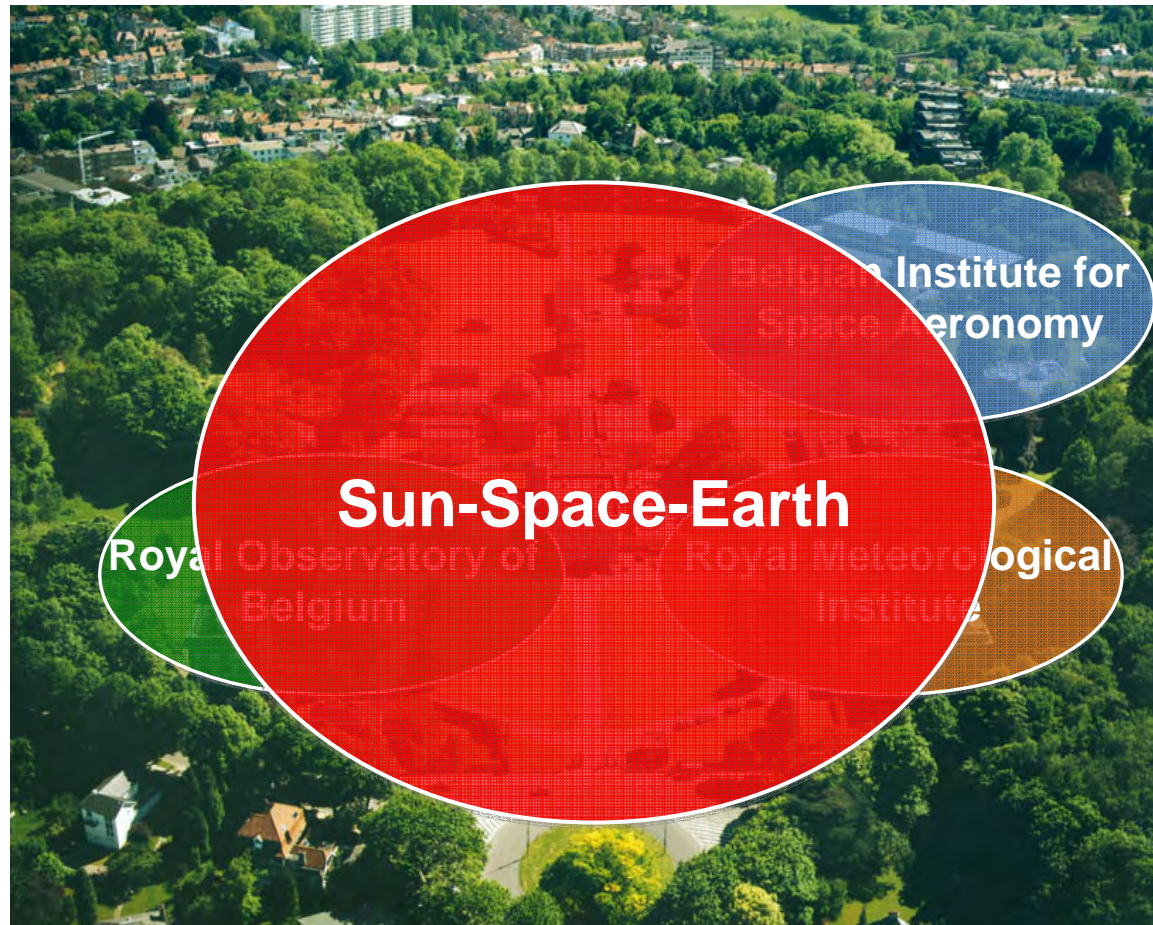


Image Credit: L. J. Lanzerotti, Bell Laboratories, Lucent Technologies, Inc.



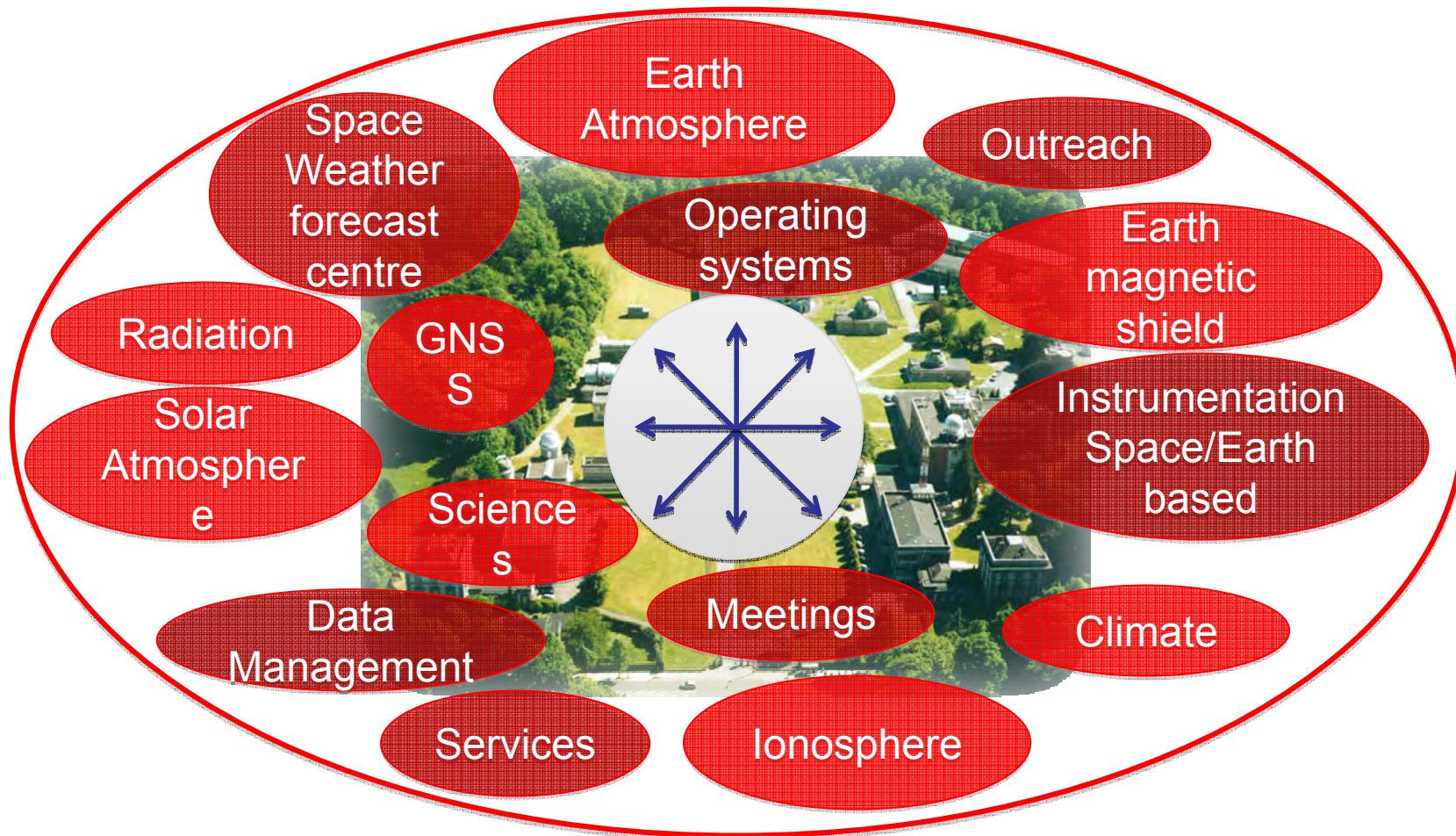
# Solar-Terrestrial Centre of Excellence @ Space Pole: Bundling know-how



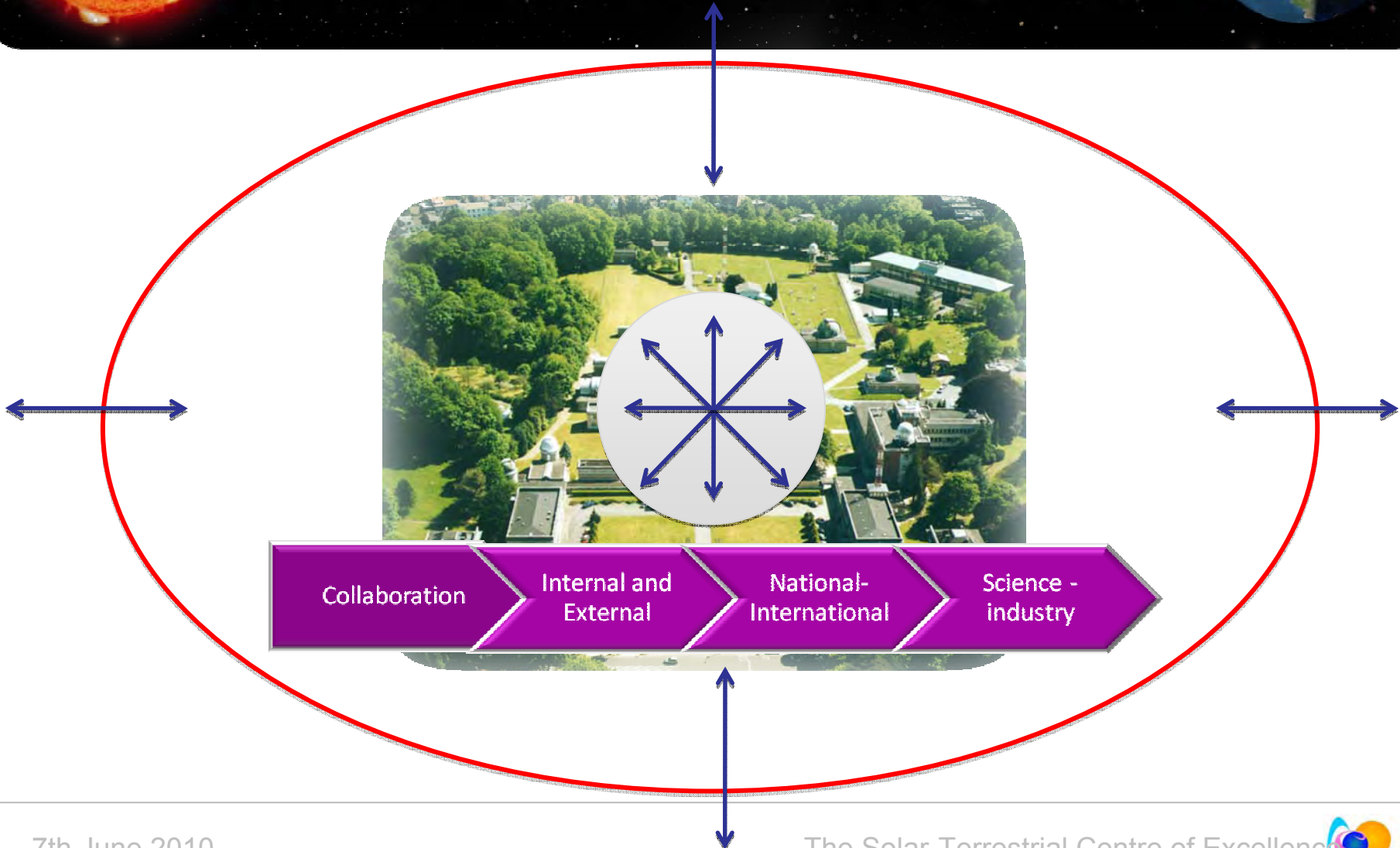
7th June 2010

The Solar-Terrestrial Centre of Excellence 

# Sun-Space-Earth



# Vision on Space Weather





# National Context

imec

CPA-KULeuven

VERHAERT SPACE  
A QinetiQ Company

THALES

RHEA

Université de Liège

CSL

spaceapplications SERVICES

THE VON KARMAN INSTITUTE FOR FLUID DYNAMICS  
An International Center for Advanced Training in Research through Research

TRASYYS  
WE GET IT DONE

SPACEBEL

CSR

DHConsultancy

# International context



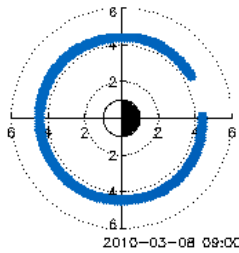
EU  
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NATO  
ESA  
EUMETS  
AT  
ISES



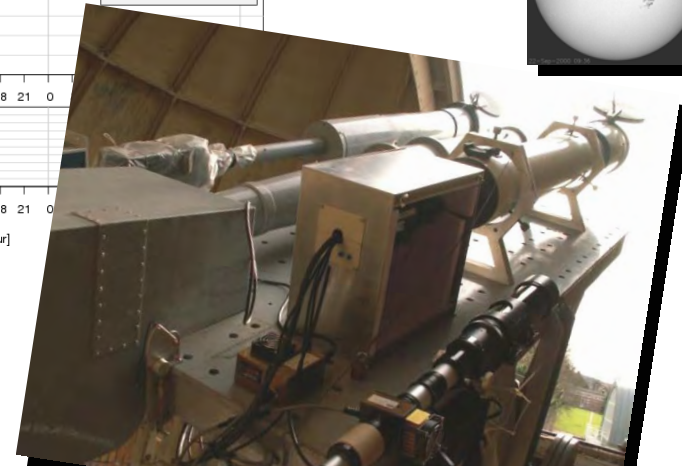
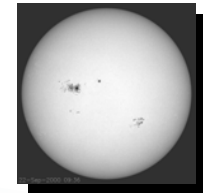
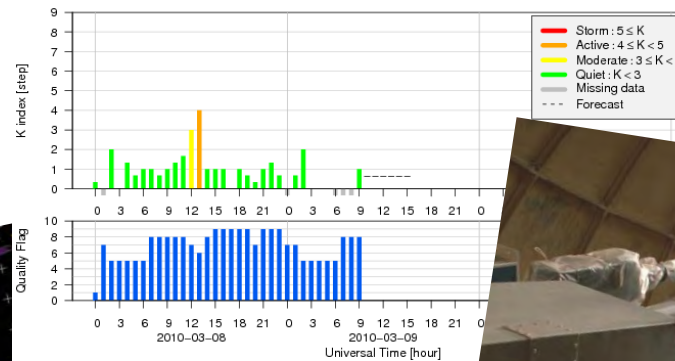
COST actions  
FP-actions  
Galileo  
GMES  
Space Weather  
Weeks



# « In house » expertise



Nowcast and forecast of the local K Index at Dourbes (50.1°N, 4.6°E)  
(hybrid model, ground & space-based measurements)

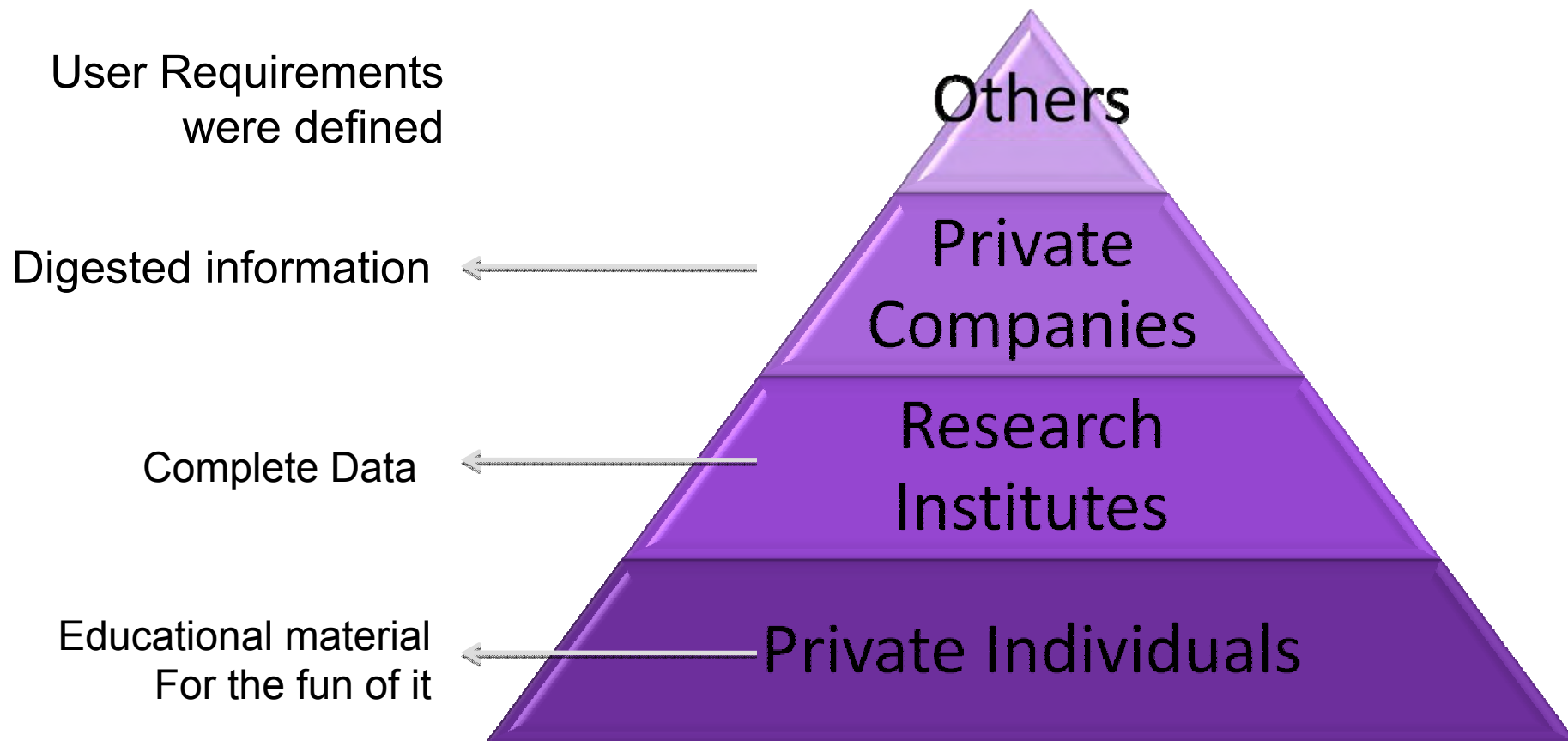


*RWC@ISES, WDC-WDS, SIDC, Space Weather Yellow Pages, GNSS, NeQuick model for Galileo, SWENET, European Space Weather Portal, SPENVIS, SEPEM, PROBA2 Science Operations Centre, MarsREM, Geophysical Observatory at Dourbes, B.USOC, Radio Observatory at Humain, USET, EPT, Modelling tools, Asteroid tracking, Celestial Mechanics, ...*

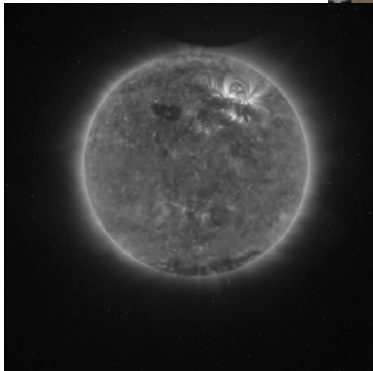


# Service Development Activity

## Space Weather applications Pilot Project



# PROBA2: State of the Art



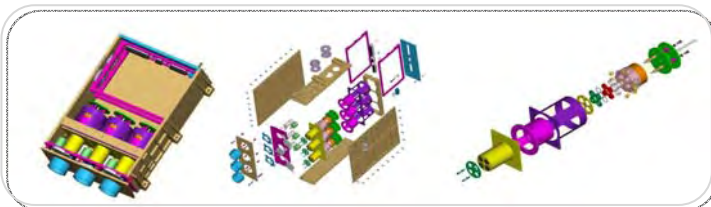
## In house expertise

- Heritage of previous missions
- Development of scientific knowledge
- Data management and exploitation
- Science – technological experiments
- Soft- and hardware
- Mission centre

## Coupled to national context

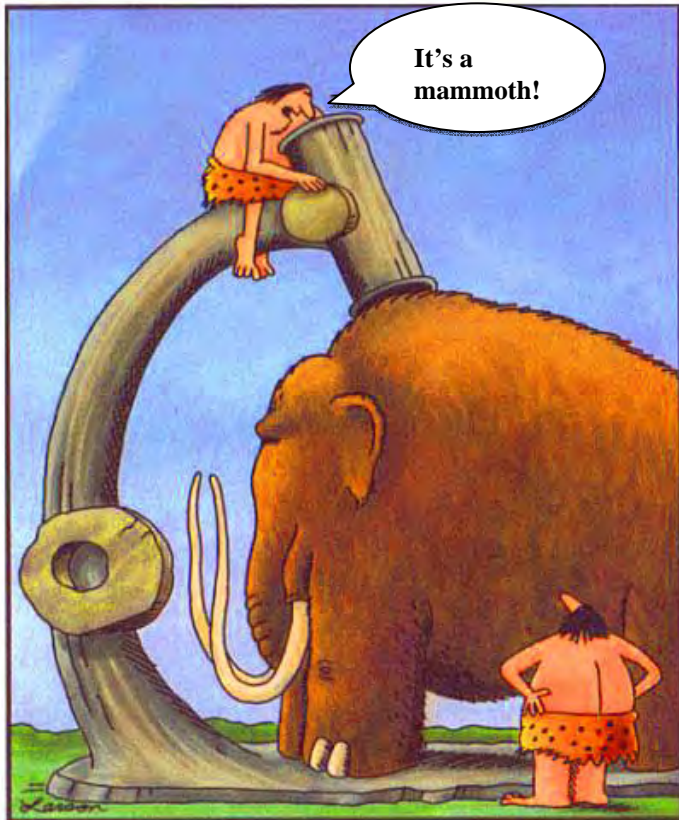
- CSL
- Verhaert Space
- Imec
- Redu

## Coupled to international context





# Vision



**The first telescope**

Know-how  
man power  
Infrastructure  
network



SSA

