

# Finland's Copernicus User Forum

## Puiteohjelmat: FP7 & H2020

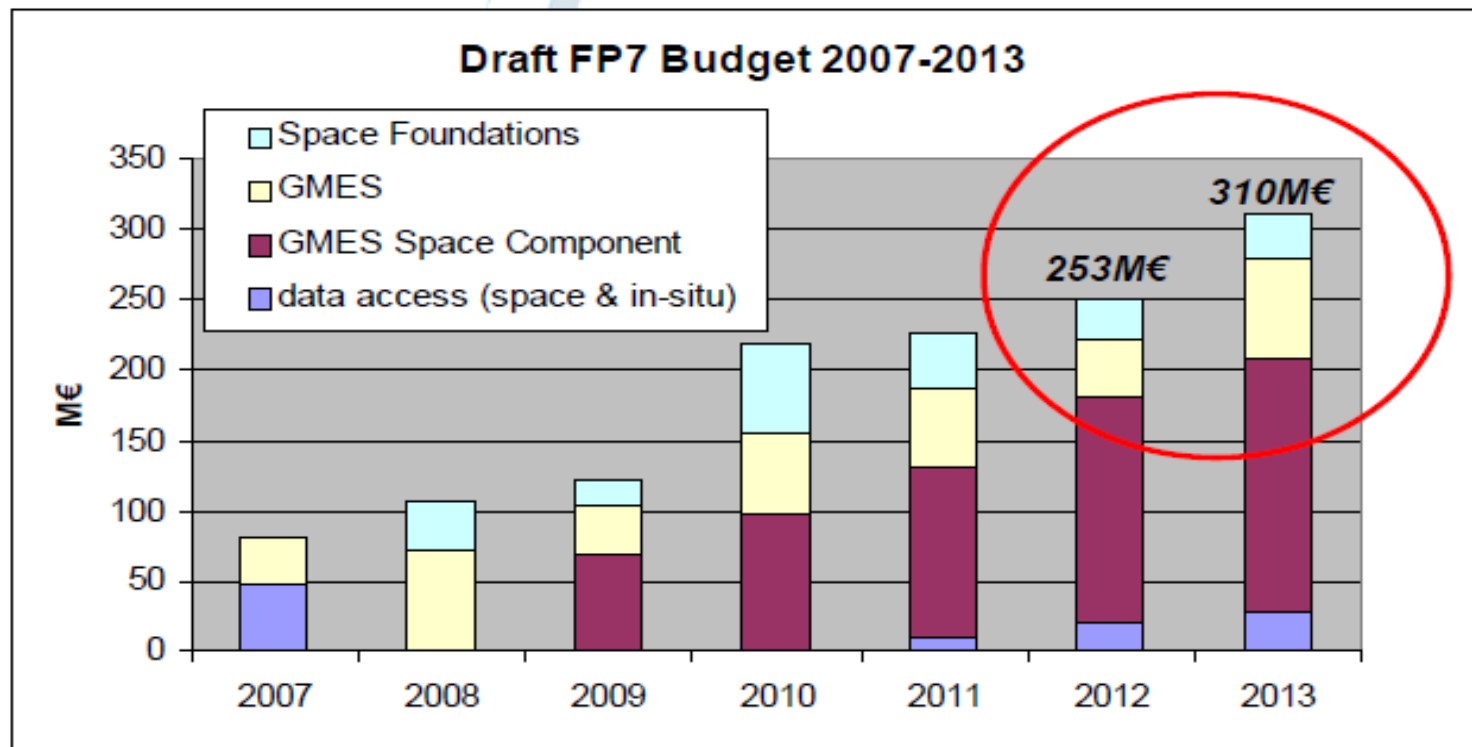
20 October 2014  
Pauli Stigell  
Tekes



DM 1352442



## FP7 Budget available - DRAFT



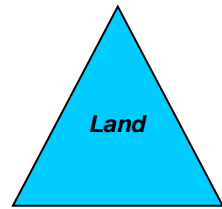
Finnish FP7 GMES projects, MACCII, ERA-CLIM2, GMES-C, Polar Ice, DECUMANUS, North State, Advanced\_SAR, MarcoPolo, GLaSS, CORE-CLIMAX, GMES-PURE, ICOS-INWIRE, MYOCEAN2, Cryoland, Recover, Cobios, PASODOBLE, AQUAMAR, GEMS, MACC, My Ocean, Geoland II ...

good participation including Finnish coordinations in all but security area

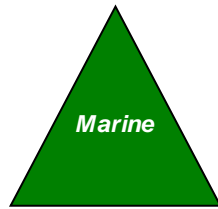
Finland in top three small countries with Austria and Norway



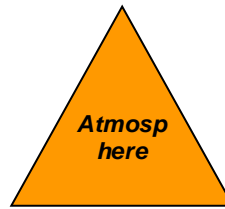
# GMES FP7 projects overview



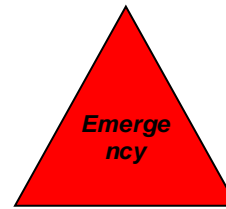
*Land*



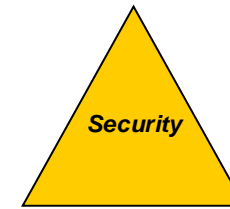
*Marine*



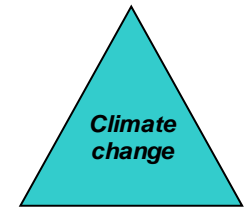
*Atmosphere*



*Emergency*



*Security*



*Climate change*

Core	GEOLAND2	MYOCEAN MYOCEAN II	MACC MACCII	SAFER	GMOSAIC	
Service Evolution / R&D	BIO_SOS MS.MONINA ISAC MyWATER SIRIUS GLOWASIS IMAGINES LOTUS GLASS SenSyF	MYWAVE OPEC OSS2015 SANGOMA	NORS	LAMPRE IncREO SENSUM PREFER	NEREIDIS DOLPHIN SIMITYS SAGRES LOBOS G-SEXTANT G-NEXT	EURO4M MONARCH-A CARBONES ReCOVER REDDAF
Downstream applications	CRYOLAND FRESHMON EUFODOS	FIELD AC AQUAMAR ASIMUT COBIOS SeaU SIDARUS OPERR	PASODOBLE ENDORSE	EVOSS DORIS SubCOAST PANGEO Geo-PICTURE		
Int. Coop.	ZAPAS MOCCASIN WatPLAN MALAREO	MAIRES		Pre-Earthquake SEMEP		REDD-FLAME REDDINESS
G&A		EAMNet		GARNet-E		
Support actions	HELM	E-AIMS	ICOS-INWIRE IGAS		BRIDGES	CORE-CLIMAX CHARM

# GMES FP7 Land projects



Malaria vector control risk management in Africa



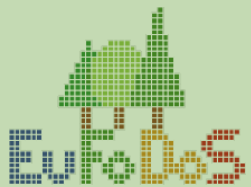
Water Allocation in the International Incomati Basin



Information and forecasting for water management



GLOWASIS: Global Water Scarcity Information Service



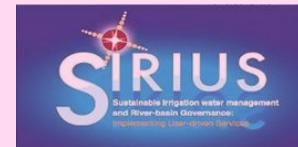
Forest damage and functional parameters assessment



Operational monitoring of snow and land ice



Hi-res fresh water products (eg. chlorophyll, turbidity)



Tools for water resources governance in water-scarce environments



Forest Resources Assessment and Monitoring in Russia



Pre-operational ecological modelling system for multi-annual monitoring of NATURA 2000 sites



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Multi-scale EO-based pre-operational monitoring service of NATURA 2000 habitats



Information Service on Agricultural Change (crop yield, damage assessment)

Start 2013 :  
IMAGINES, GLASS, LOTUS, SenSyF



Monitoring winter-crops in Russia

# GMES FP7 Marine projects



Water quality services in coastal waters



Operational service for coastal oceanographic predictions; waves, currents, etc.

**OPERR**

From a river discharge model to coastal concentrations monitoring and prediction, and flood warning



Ocean surface waves modeling for offshore and coastal operations



European network in advanced data assimilation for ocean modelling



High quality operational services for biogeochemical and ecological parameters



Marine biogeochemistry services for water quality users

**CoBios**

Information service on high biomass blooms in Europe's coastal waters



Forecast of harmful algal blooms (HAB) along Europe's Atlantic coast



Oil Pollution Monitoring and Source Identification

**E-AIMS**

(start 2013)

Design and test of new Euro-Argo floats



Sea ice downstream services for climate research, marine safety and environmental monitoring



Monitoring Arctic Land and Sea ice cooperation with Russia



**EAMNet**

Europe-Africa Marine EO Network

Europe and Africa coastal and marine observations SP/users network

**ISONTTI 2020**

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# GMES FP7 Atmosphere projects



Air quality services on regional and local scale



Improve the quality and validation of the products delivered by the GMES Atmospheric Service with ground based remote sensing data.



Energy services for local public agencies



(start 2013) Improved sensors, Network and Interoperability of GHG concentration data



(start 2013) Harmonisation and interoperability of IAGOS GHG and aerosol data from Aircraft with GMES.

## GMES-PURE

(start 2013)  
Requirements for Marine and Atmosphere users

## HORISONTTI 2020

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# GMES FP7 Emergency projects



Detection, mapping, monitoring, and forecasting of landslides and land subsidence



Indicators of environmental and economic impact of subsidence in coastal lowland areas

**EVOSS**



Monitoring system to assist in Volcano Crisis Management



Integration of position-tagged field pictures and data with EO satellite emergency products



Enable African states to use satellite Earth Observation for the management of natural and man-made humanitarian emergencies



**SEMEP**

Search of a precursor link between ionospheric electromagnetic phenomena and seismic activity



Geohazards information service aimed at city local authorities

**LAMPRE** (start 2013)

Landslide modelling and tools for vulnerability assessment and recovery management

■ **IncREO** (start 2013)

■ risk and vulnerability mapping products targeted at vulnerable zones with climate change trends including multi-hazards

■ **PREFER** (start 2013)

■ Prevention and recovery of forest fires in the Mediterranean area

■ **SENSUM** (start 2013)

■ continuous vulnerability assessment and analysis tools applied to Seismic and landslide hazards in Central Asia

**PRE-EARTHQUAKES**  
EU/Russia cooperation on earthquakes precursors for a global Earthquake Observation System (EQuOS)  
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# GMES FP7 Climate Change projects



Providing climate change time series and monitoring services for Europe



Monitoring and assessing of regional climate change in high latitudes and the Arctic



30-year re-analysis of CARBON fluxes and pools over Europe and the Globe

**CORE-CLIMAX** (start 2013)

"Climate Record Creation and Preservation" and "Applications" in reanalysis

**CHARMe** (start 2013)

Commentary meta-data Repository for Climate Change users



Preoperational EO-based services supporting African Congo Basin countries in monitoring deforestation and forest degradation for REDD



Remote sensing services to support REDD and sustainable forest management in tropical region



Fast Logging Assessment & Monitoring service in the tropics



Forest degradation monitoring in Gabon and the Republic of Congo supporting effort to implement the REDD+ mechanism.  
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# H2020 Space 2014-2020

## Current assumption

Competitiveness  
of the European Space Sector:  
Technology and Science

Global Navigation  
Satellite System  
GNSS

423.85  
M€

29.7 %

Earth  
Observation

163.5  
M€

11.5 %

Protection  
of European assets  
in and from Space

214  
M€

15.0 %

494  
M€

34.7 %

SME  
Instrument  
+ FTI

106.8  
M€

7.5 %

Miscellanea

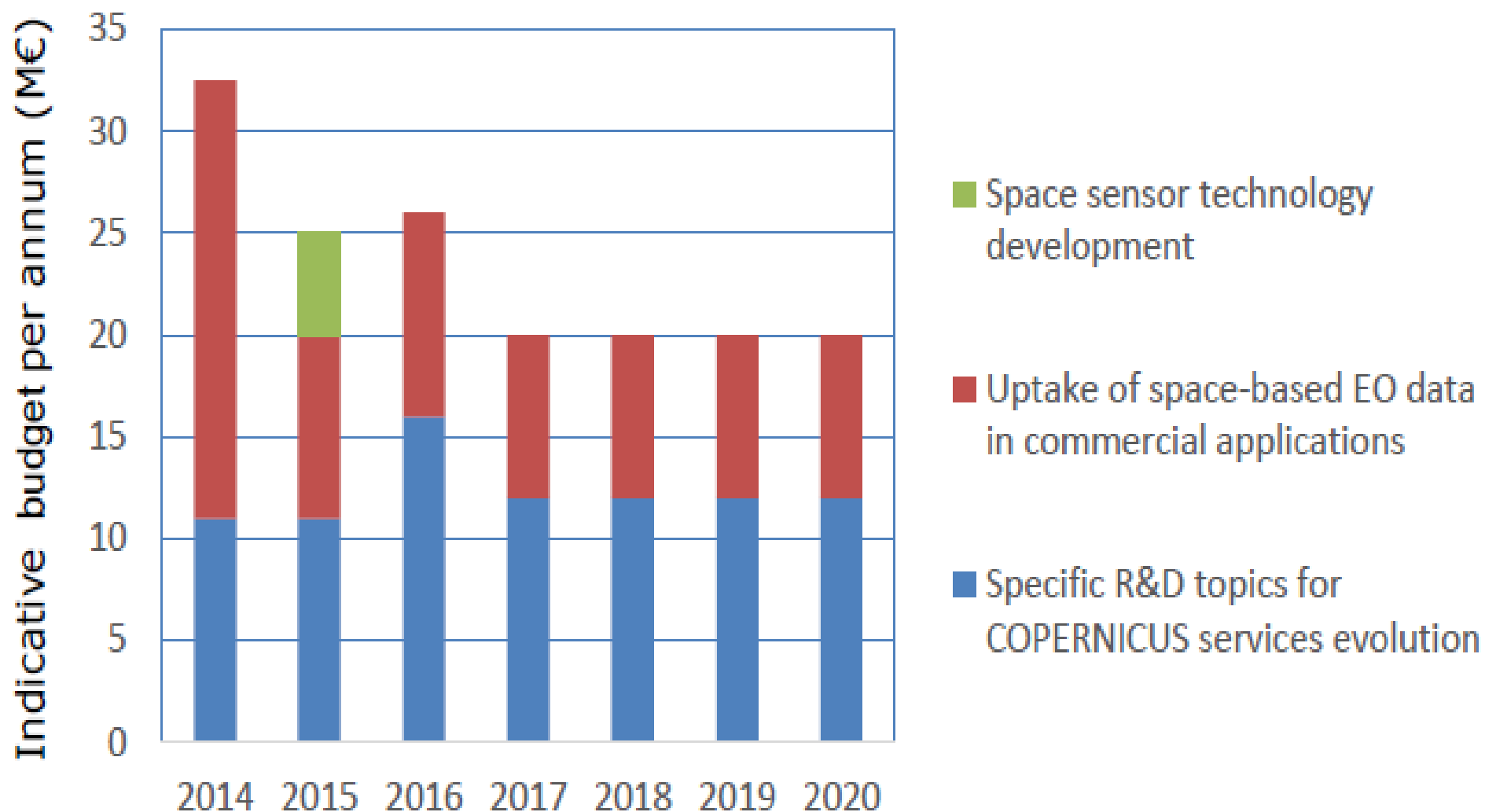
23.05 M€

1.6 %

Budget (2014-20)  
1,425.2 M€



# H2020 Space 2014-2020 – Earth Observation



# Tougher competition

Call	Topic	Indicative budget WP2014 (MEUR)	# proposals evaluated
H2020-EO-2014			63
EO-1-2014	New ideas for Earth-relevant space applications	10	56
EO-2-2014	Climate change relevant space-based data reprocessing and calibration	5,5	4
EO-3-2014	Observation capacity mapping in the context of Climate Change monitoring	6	3
H2020-PROTEC-2014			27
PROTEC-1-2014	Space Weather	8	17
PROTEC-2-2014	Access technologies and characterisation for Near Earth Objects (NEOs)		10
H2020-COMPET-2014			119
COMPET-01-2014	Technologies for European non-dependence and competitiveness	10	19
COMPET-02-2014	Independent access to space	8	13
COMPET-03-2014	In-Space electrical propulsion and station keeping	4	1
COMPET-04-2014	Space Robotics Technologies	1	1

Success ratio fell from 1:3 ...5 (FP7) to 1:6...10 (1st Call H2020)

Only **excellent** proposals win.

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# Call 2015

## 25 M€ to these

- EO 1 – 2015: Bringing EO applications to the market
- EO 2 - 2015: Stimulating wider research use of Copernicus Sentinel Data
- EO 3 – 2015: Technology developments for competitive imaging from space – hardware development

Plus CLIMATE ACTION (CS5) – GEO(SS) projects...



# Thanks



# ESA EO, M€

## Historic

Meteosat Operational	0,4
EOPP + extension	2,6
EOPP extension 2	2,1
EOPP special extension	0,4
ERS 2 Phase E	1,8
ERS 2 Phase E1	0,5
Earth Watch Climate Change Initiative	0,7
Earth Watch GMES	3,6
GMES Space Component Segment 1 - 1 Ph 1 and 2	8,5
ENVISAT 1	18,3
METOP 1 PP	0,8
METOP 1 Phase C/D	4,8
POEM-1 Prep. Progr.	1,3
Meteosat Second Generation	5,7
EO Envelope Programme	10,3
EOEP 2	12,9
EOEP 3	15,5
MTG Development	2,0
Earth Watch INFOTERRA/TERRASAI	0,8

## 2014 payments

MTG Development	890 000,00
METOP Second Generation	407 000,00
EOEP Period 2	11 000,00
EOEP Period 3	993 000,00
EOEP Period 4	1 898 000,00
GMES Space Component	1 052 000,00
Earth Watch - Climate Change Initiative	119 000,00

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# National Funding

- Academy of Finland, [www.aka.fi](http://www.aka.fi)
- Tekes, e.g.
  - Cleen SHOK MMEA
  - DIGILE SHOK
  - Space Call 2013: few projects along the Space strategy 2013-2020
  - Arctic Programme

