

INCA-CE: The Challenge of Severe Weather Warnings

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Severe Weather and Impact



The need of civil society and economy

Save Life!

Save Cost!

Reduce Risks
and impacts!

The Challenge of Severe Weather Warnings

More detailed
and accurate
weather
warning in time
and space

Better coordination
between weather
service and crisis
management

Optimised strategies
of using weather
warning information

INCA-CE Project

INCA Central Europe –



Integrated nowcasting system for the Central Europe area

The INCA-CE project is funded by



INCA-CE Project

- **Project budget: 3.262.900 €**
- **Project duration:
April 1. 2010 – September 30. 2013**
- **16 partners from 8 CE countries;
ZAMG is the Lead-partner**
- **www.inca-ce.eu**

INCA-CE: Objectives

Reducing impact of weather-related natural disasters (e.g. windstorms, flooding, icing) by establishing a warn-on-forecast system

Improvement of risk management standards and methodology in order to enable management authorities to issue more detailed assessments and warnings.

More precise estimation of weather-related risks and potential hazards in the private sector.

Improvement in the accuracy and timeliness of severe weather warning

INCA-CE: Relevance

Operational Hydrology

Prediction of heavy rainfall and associated flooding risks will help to set up efficient procedures in the management of mitigating actions for the protection of buildings, roads, and other infrastructure.

Civil protection

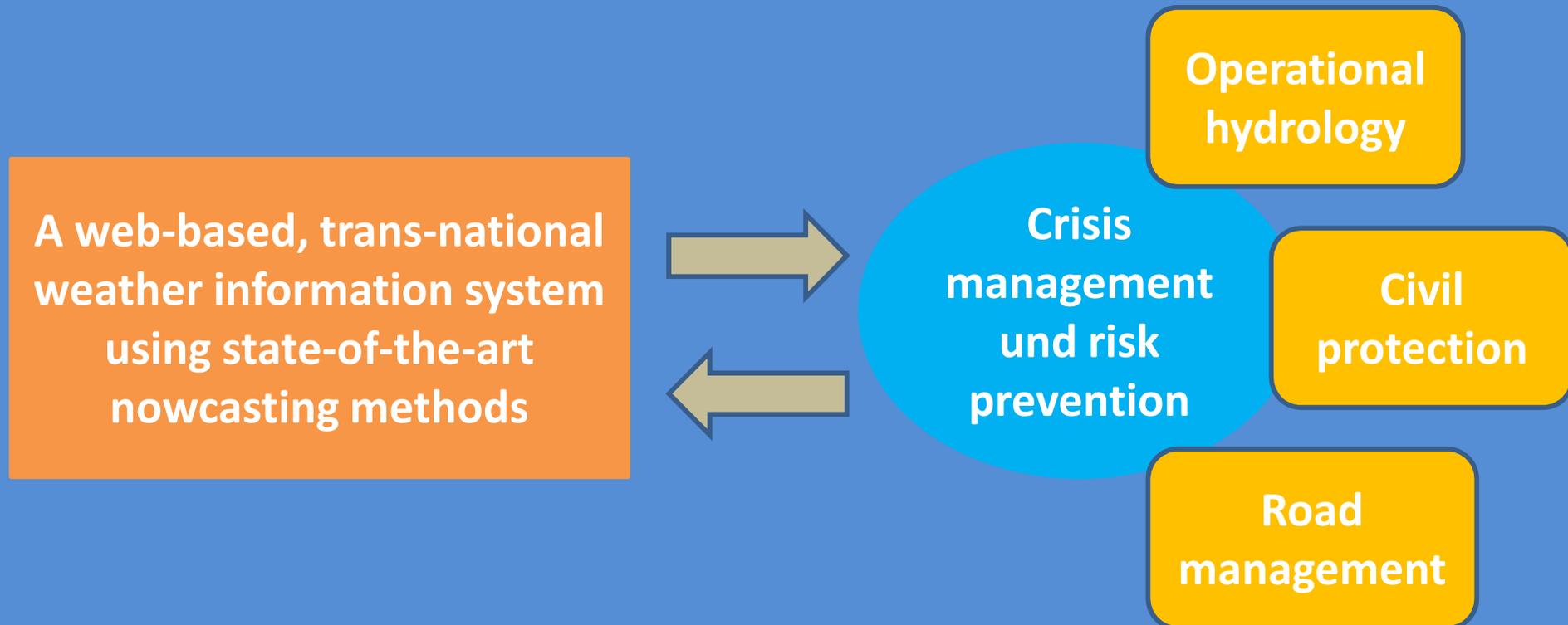
Civil protection will benefit from a more comprehensive assessment of meteorological threats, and a more detailed and timely forecast, leading to more efficient warning protocols and dissemination strategies.

Road management

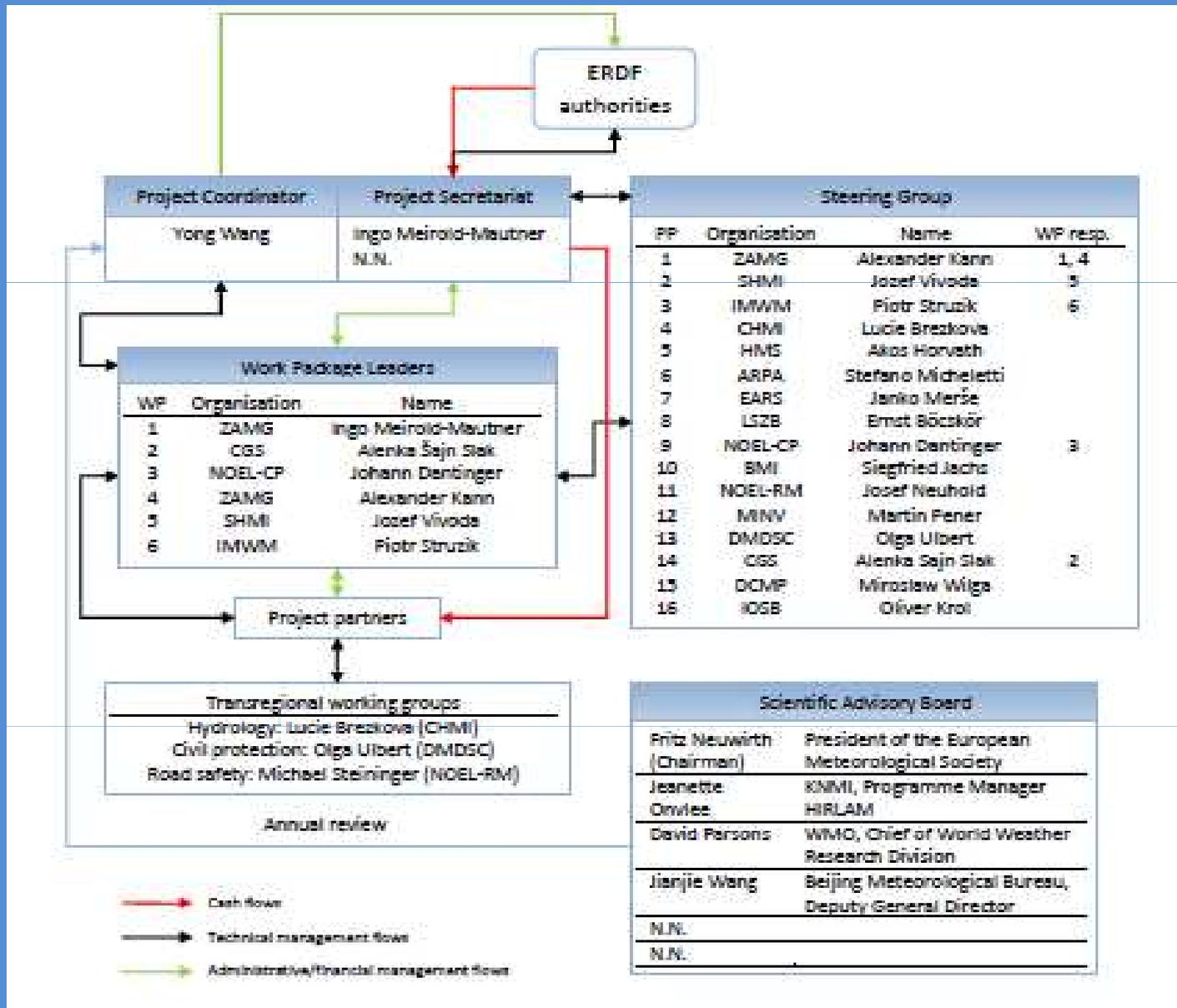
Road safety will be enhanced by a more detailed road weather forecast made available both to the road management authorities as well as to the general public.

While the frequency and strength of critical weather events and natural disasters cannot be reduced, a state-of-the-art information and warning system will be developed to better support public and private institutions in case of severe events

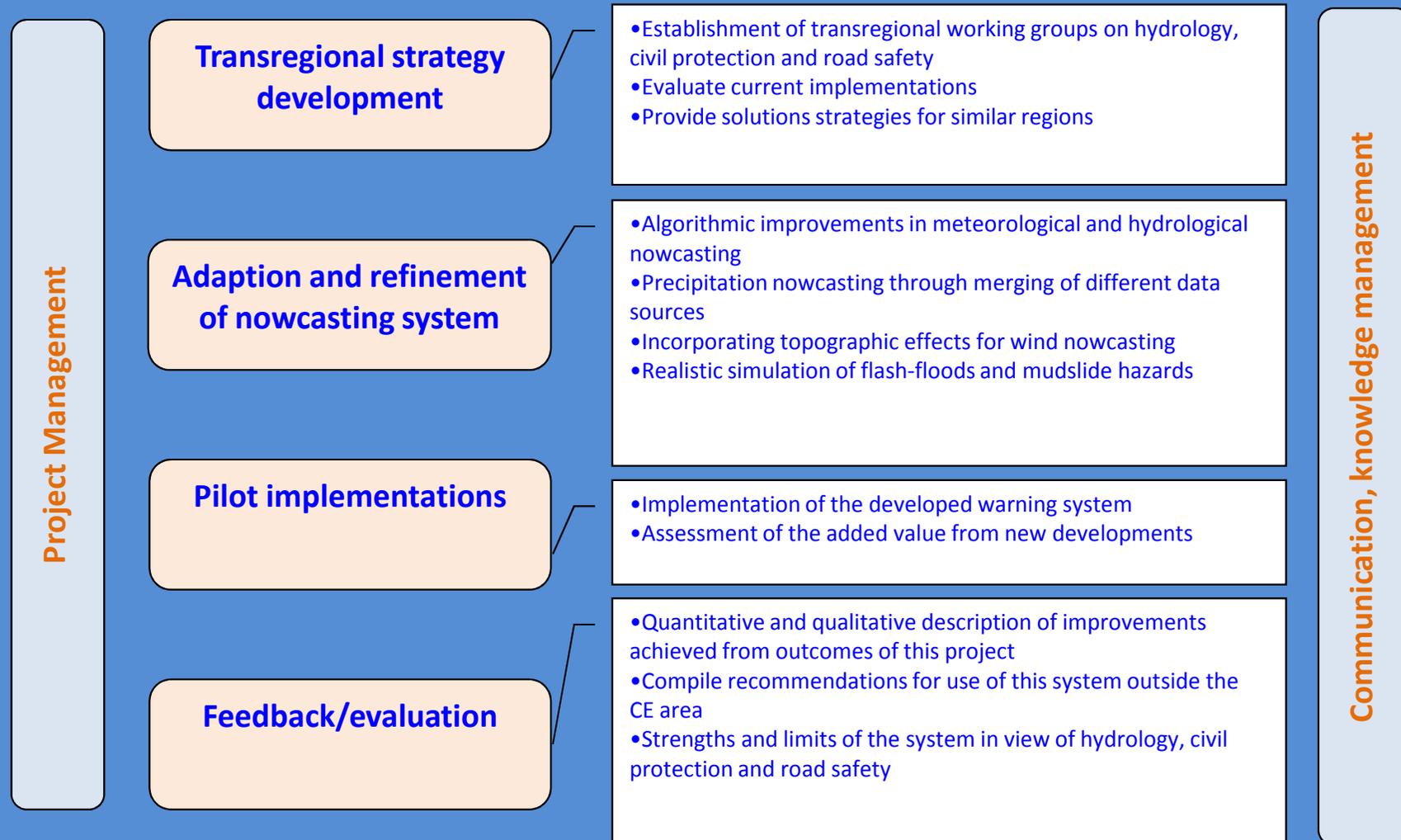
INCA-CE: Method



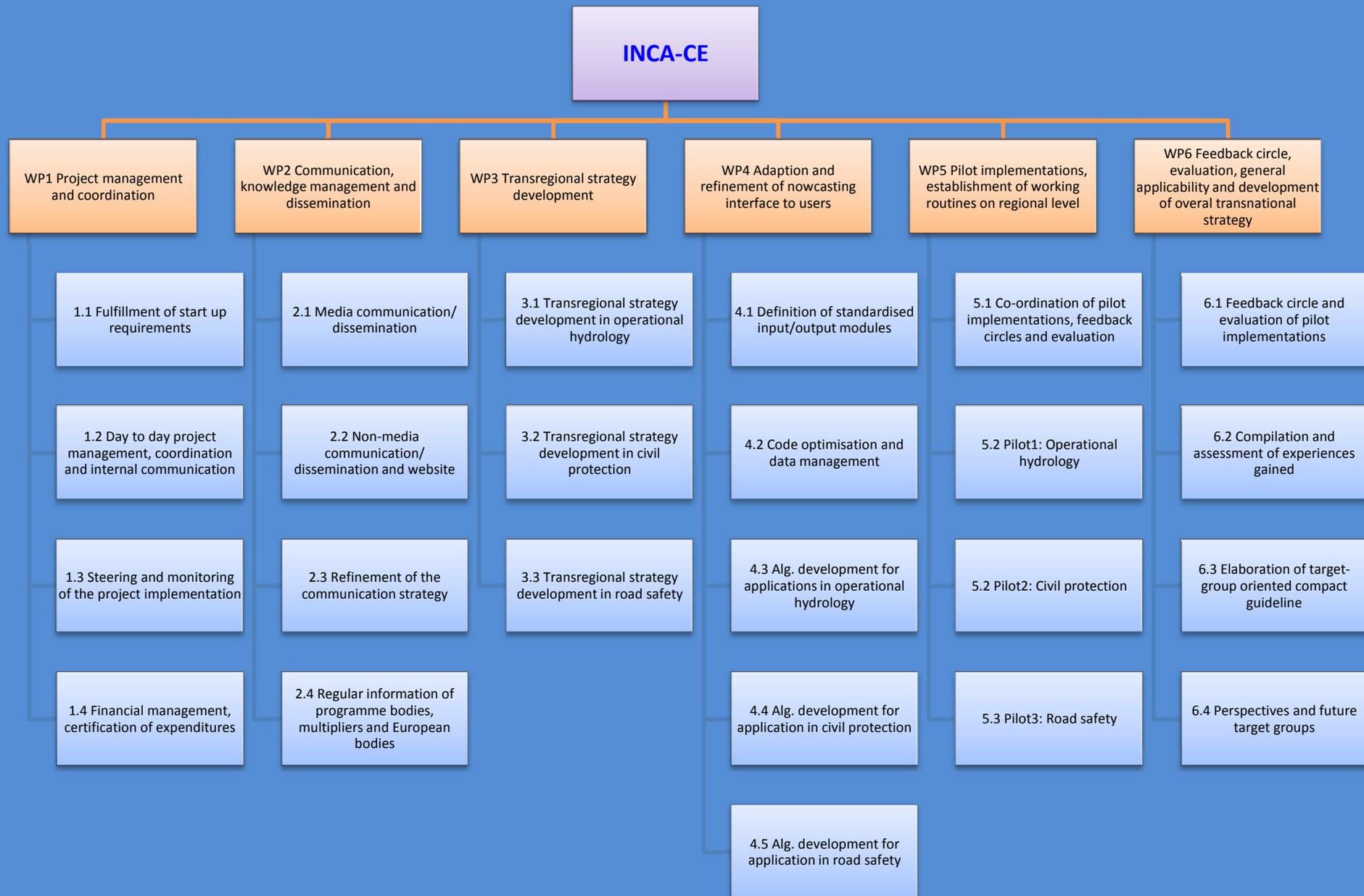
INCA-CE: Management



INCA-CE Project: working packages



INCA-CE: actions



INCA-CE Partnership

Project partners



Central Institute for Meteorology and Geodynamics
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Provincial Government of Lower Austria – Section for Fire Brigade and Civil Protection
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Contact person: [Stefan Kreuzer](#)



Ministry of the Interior – Department II/4 – National Crisis and Disaster Management and Civil Protection
Minoritenplatz 9, A-1014 Wien
Contact person: [Sierfried Luchs](#)



Safety Centre Burgenland company
Europaplatz 1, A-7000 Eisenstadt
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Provincial Government of Lower Austria – Department for Road Maintenance
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Contact person: [Michael Steininger](#)



Czech Hydrometeorological Institute
Na Šabatce 17, CZ-14306 Prague
Contact person: [Lucie Brezková](#)



Fraunhofer-Institute of Optronics, System Technologies and Image Exploitation
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Institute of Meteorology and Water Management
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Hungarian Meteorological Service
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Contact person: [Akos Horvath](#)



Environmental Agency of the Republic of Slovenia
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Contact person: [Janko Meršič](#)



Regional Agency for Environmental Protection
Via Cairoli, 14, I-33057 Palmanova
Contact person: [Stefano Micheletti](#)



Department of Crisis Management
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Contact person: [Miroslaw Wilga](#)



Disaster Management Directorate of Somogy County
Somssich str. 7, H-7400 Kaposvár
Contact person: [Olga Ulbert](#)



CGS plus d.o.o., innovative IT and Environmental Technologies
Brnčičeva ulica 13, SI-1000 Ljubljana
Contact person: [Alenka Šain Slak](#)



Slovak Hydrometeorological Institute
Jeséniova 17, SK-83315 Bratislava
Contact person: [Jozef Vyvoda](#)



- Central Institute for Meteorology and Geodynamics
- Security Center Burgenland
- Provincial Government of Lower Austria - Fire Brigade and Civil Protection
- National Crisis and Disaster Management and Civil Protection
- Provincial Government of Lower Austria - Road Maintenance

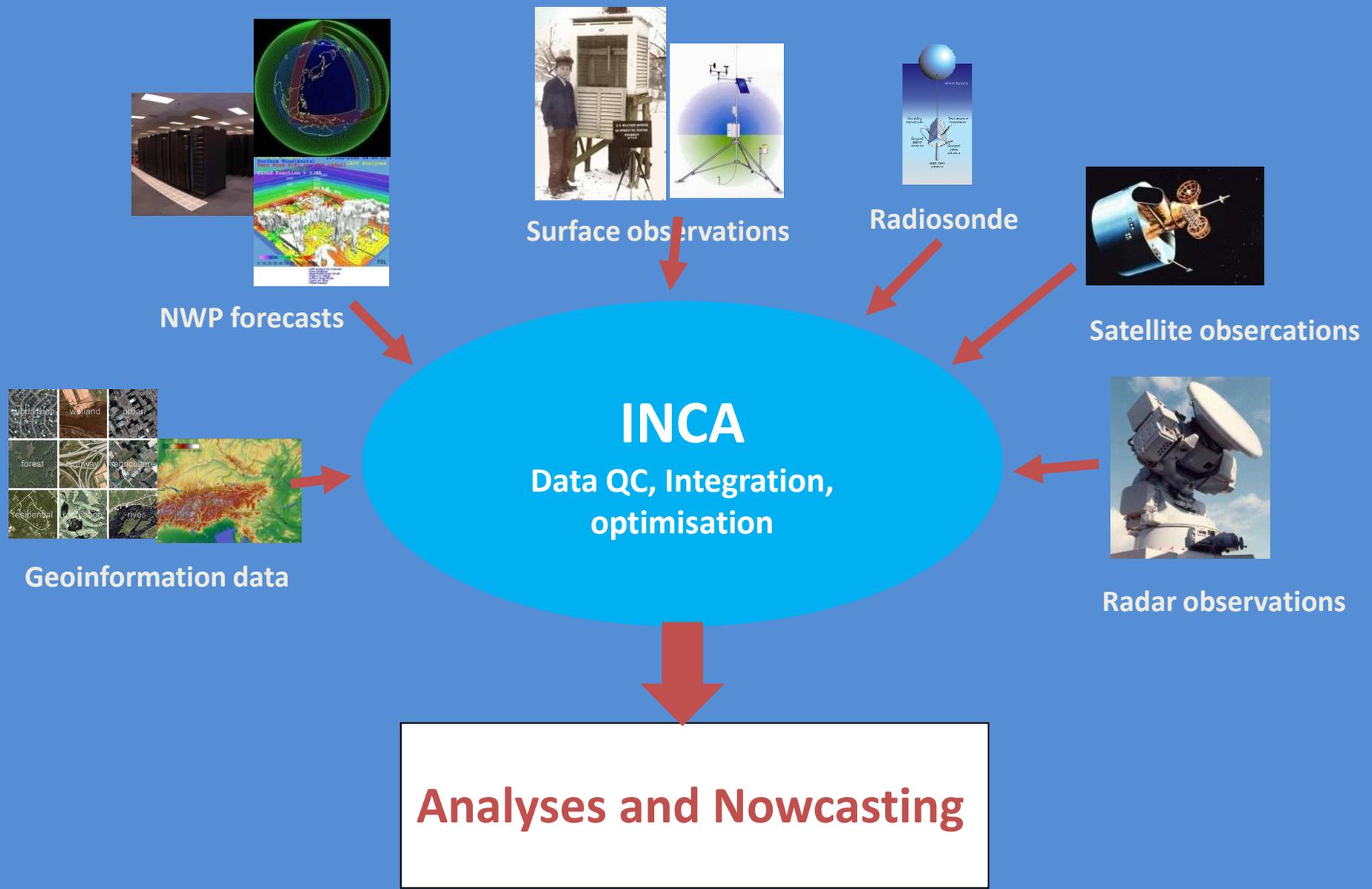


- Czech Hydrometeorological Institute
- Fraunhofer-Institute of Optronics, System Technologies and Image Exploitation
- Hungarian Meteorological Service
- Disaster Management Directorate of Somogy County



- Regional Agency for Environmental Protection
- Slovak Hydrometeorological Institute
- Ministry of Interior of the Slovak Republic
- Environmental Agency of the republic of Slovenia
- CGS plus d.o.o. Innovative IT and Environmental Technologies
- Institute of Meteorology and Water Management
- Department for Crisis Management Poland

INCA: Integrated Nowcasting through Comprehensive Analysis



INCA R&D focuses

Nowcasting with very high resolution in space and time

Currently Nowcasting is based on observations

Integrating Radar, AWS, and other observations, etc.

Probabilistic nowcasting; introduction of LAMEPS

Combination of nowcasting with Cloud Permitting Model

Time has come to develop weather warning in which NWP play a much larger role

Solutions in mountainous region, e.g. Alps

Data QC and data assimilation

Further scientific developments

- Coupling of INCA with AROME
- Nowcasting of wind and gusts
- Surface Pressure Analysis
- Orographic initiation of convective cells
- Improved data screening
- Enhanced use of satellite data
- Probabilistic QPE and INCA
- INCA road models
- ...

INCA-CE people



..... and now the work begins



Weather?

INCA - CE

Improved weather forecasting
for Central Europe

Photo: Marjan Korožec



The first INCA-CE Newsletter
is available at www.inca-ce.eu

Summary

In frame of an EU project INCA-CE 16 groups from 8 Central European countries, not only from weather services, but also from hydrological services, public authorities of crisis management, civil protection and road management, will work together on:

- more detailed and accurate nowcasting system
- optimised strategies for using weather warning information by decision-maker of various social and economic sectors
- coordinated warning of severe weather

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