

# cesah and the ESA Business Incubation Initiative in Darmstadt

Partner of the  **Business Incubation Initiative**

# The Centre for Satellite Navigation in Hessen

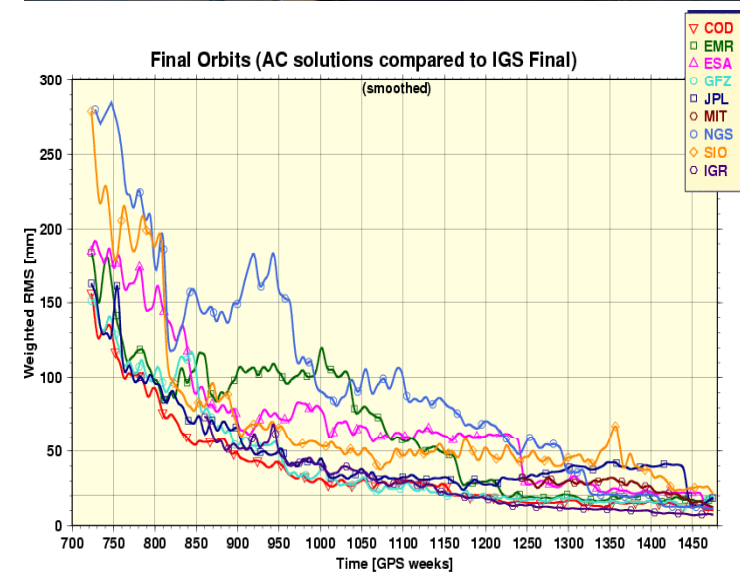


- **cesah** is a competence, information and incubation centre for Satellite Navigation applications
- Its foundation goes back to a joint initiative of the European Space Agency and the Region of Hessen
- to establish a centre for Satellite Navigation in close vicinity to the European Satellite Operations Centre ESOC.
- The centre supports the development of business ideas and start-up companies in the Satellite Navigation domain.
- Partner of the  **esa** Business Incubation Initiative



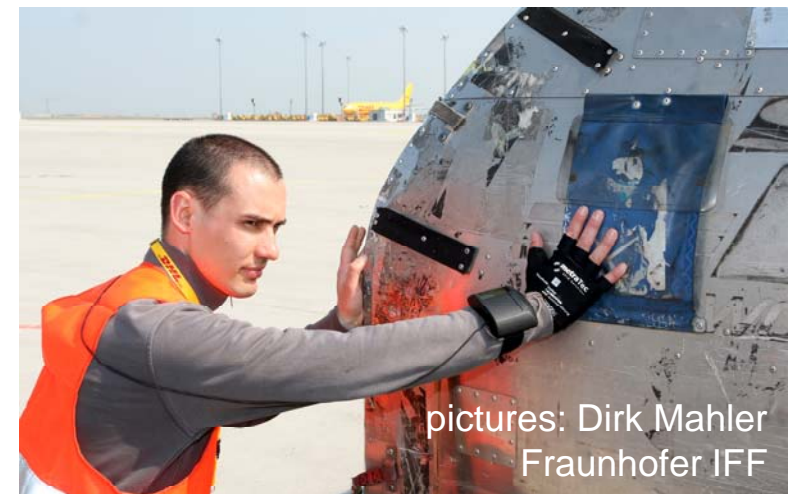
# Satellite Navigation at ESOC

- 15 years of experience in the processing and enhancement of GPS and GLONASS data
- One of the few centres in the world for high precision position determination in support of scientific applications – on ground at cm level
- ESOC contributes significantly to the European Satellite Navigation Systems Galileo by provision of technologies and services



# GNSS-INDOOR - Navigation in Constrained Areas

- Definition of indoor navigation requirements
- Technology evaluation and selection
- Implementation and test of navigation technologies (GPS, WLAN, UWB, Ultra Sound, Video, RFID, GSM, Map Matching) on component level in lab
- Integration in demonstrator system
- Successful field test at DHL Hub Halle/Leipzig
- Successful demonstration of the potential of the evaluated technologies for monitoring and optimisation of logistic processes
- Research project funded by the German Ministry of Economics through the German Space Agency DLR under research grant 50 NA 0701

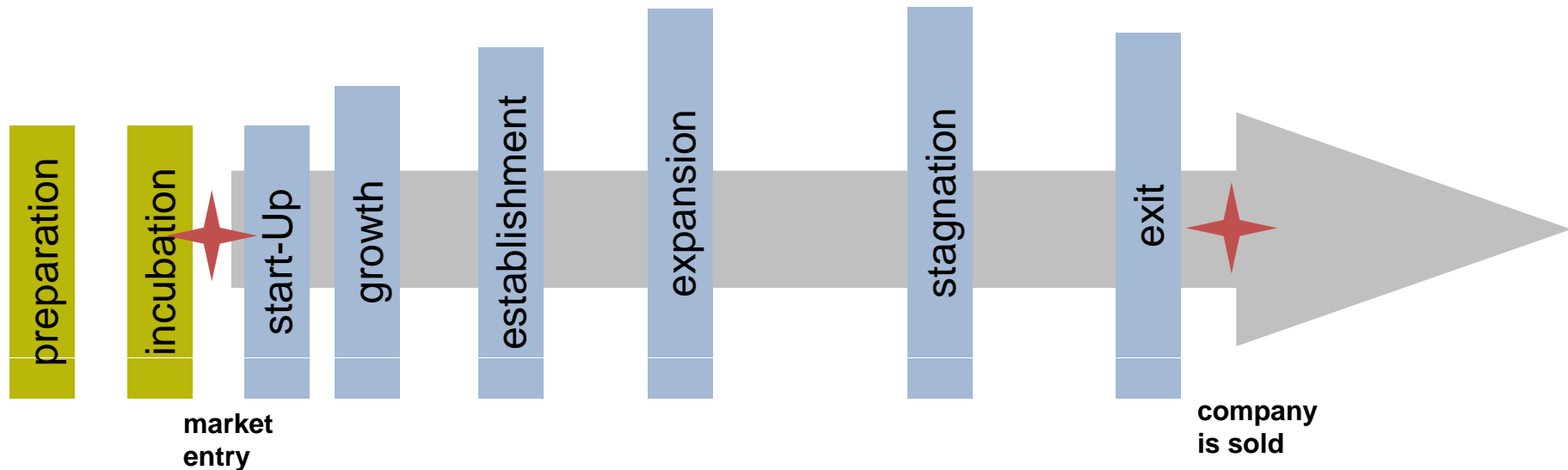


# The cesah Portfolio – What do we offer?



- Incubator: **cesah** supports the technical development, realisation and marketing of new products and services in the Satellite Navigation applications domain.
- Competence and information centre: **cesah** is central source of know-how for Satellite Navigation and its applications.
- **cesah** is partner of the ESA Business Incubation Initiative and direct point of contact for all innovative business ideas in the context of Satellite Navigation through a permanent open call and a standardised evaluation procedure.
- **cesah** organises events on topics related to Satellite Navigation technologies and their applications, it is regional organiser of the Hessian participation in the European Satellite Navigation Competition (ESNC) 2009.
- The key factor to success is the provision of technical support through a network of ESA experts and the cesah shareholders in close collaboration with regional and international partners i.e. Hessen Agentur and the European Space Incubators Network (ESINET).

# cesah supports Business Incubation



Incubatee

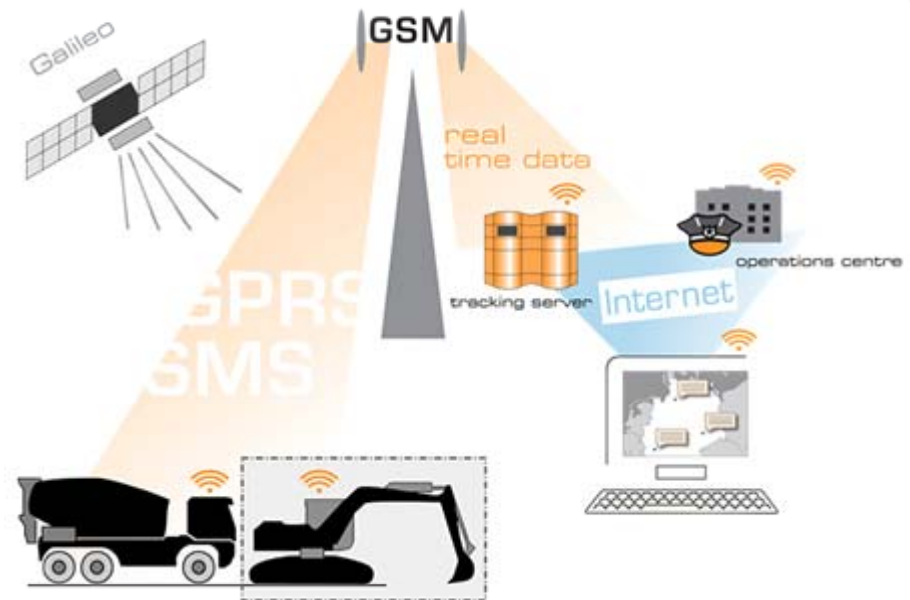
Alumni Network

- From the idea to a concept and a business plan
- From the development to patent and prototype
- Establish an organisation structure for the company
- Acquire strategic partners and launching customers

# Examples for Business Incubation at cesah



First alumni of the ESA Business Incubation at cesah



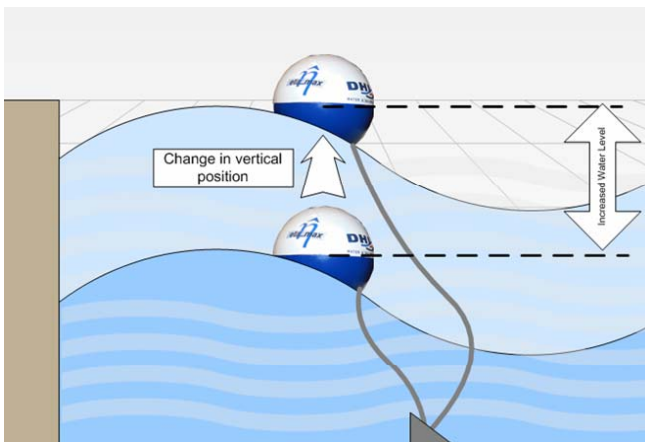
## ISOFLEET

The first comprehensive Information system for **Secure** and (cost-) **Optimised** fleet management of building machines

# Examples for Business Incubation at cesah

## The G-WaLe Project

etamax 



- Floods are a permanent threat over Europe and world wide representing a significant economic and social impact for the affected regions.
- The availability of reliable data is a key issue to better handle the problem of flood management.
- G-WaLe allows the acquisition of water level data with high spatial and temporal resolution by means of Satellite Navigation technologies.
- G-WaLe therefore allows a fast and flexible response of task forces in a crisis situation.

Regional Winner ESNC 2006



# Examples for Business Incubation at cesah



**samango**  
software and management to go

- 4d-miner – a web-based service
- Geocoded data acquisition and analysis
- Application of the position information obtained through Satellite Navigation

- [www.samango.de](http://www.samango.de)



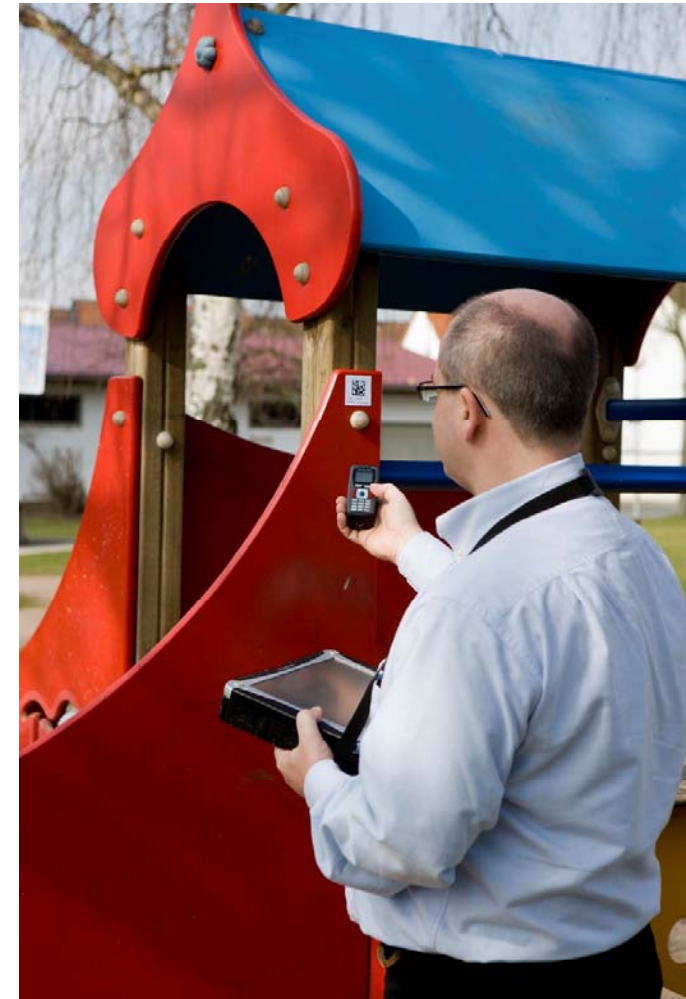
# Examples for Business Incubation at cesah



## **Punchbyte<sup>®</sup>** **Medienagentur und Softwarehaus**

**Project g-diag:** Maintenance and control of technical installations as well as public buildings and industrial sites to account for increasing technical and legal requirements.

- Parks and play grounds, sport installations
- Control of bridges, street work, street lights as well as maintenance of land registers
- Buildings, installations in buildings and industrial sites
- Flood management installations
- Networks (waste water, fresh water, electricity, gas, etc.)



# Examples for Business Incubation at cesah



*Wir begleiten Sie auf sicherem Weg*

- Multipath effects can severely impact the accuracy of the position determination caused by signal reflection.
- RealMIT allows the identification and mitigation of such disturbances by means of innovative antenna technologies in real time.
- GPS positioning at 1m-level !



# Examples for Business Incubation at cesah



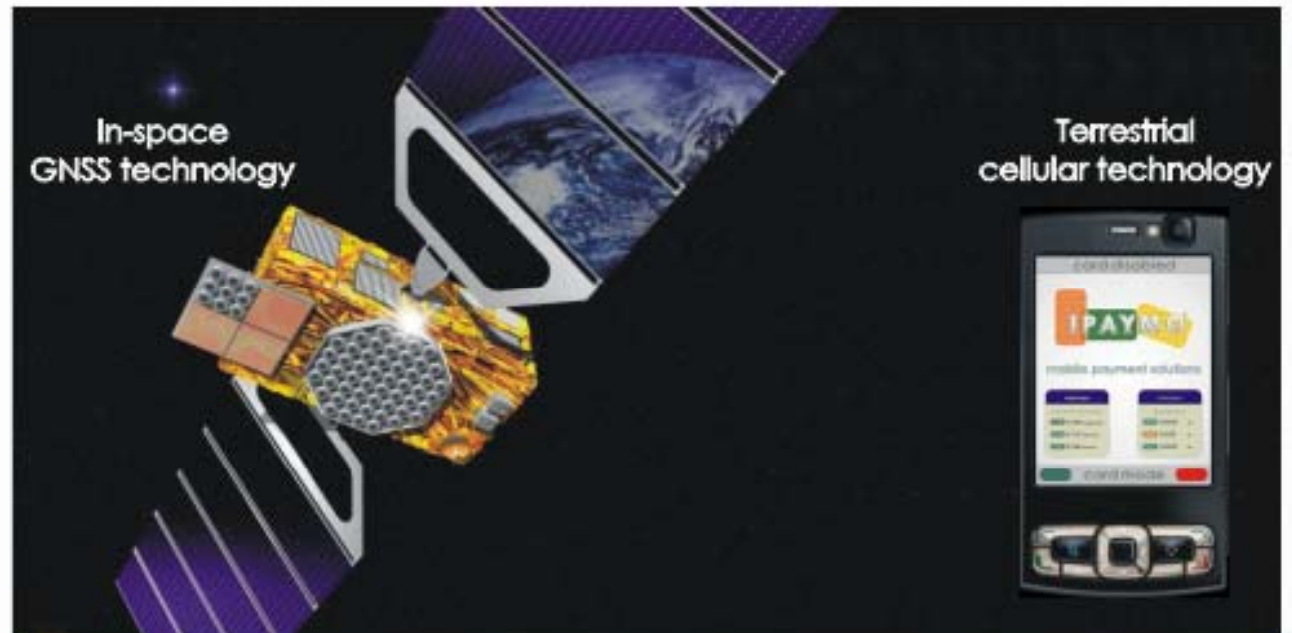
MOBILE PAYMENT SOLUTIONS

PROVIDING

location aware and  
multifactor authentication  
complemented with  
innovative integrity checking

PATENT PENDING SOLUTIONS

for use in any  
transaction based system  
identity & access control system  
high security appliance



protects against credit card abuse  
secures e-commerce transactions  
enables true mobile payments  
provides strong authentication

## MAVinci

- Sale and rent of autonomous Micro Aerial Vehicles (MAV)
- Service for aerial data acquisition

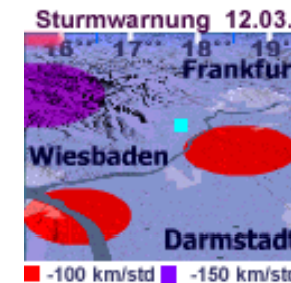
### **Applications:**

- Acquisition of aerial photographs
- Monitoring of construction sites
- Monitoring of crop growth



## Geo-Weather & Location-Based-Weather

- Visualisation of weather information with high spatial and temporal resolution („nowcast“) for the Internet and smart phones
- compatible with the latest mapping technologies (Google Maps, OGC Maps)
- Quantum jump in visualisation and content presentation, animation and zoom functionality
- Visualisation of own position relatively to weather fields:
  - During leisure activities
  - For storm warnings
  - In the car
- Unique selling proposition: combination of 2D/3D animation, presentation of weather data, Internet technologies, communications design



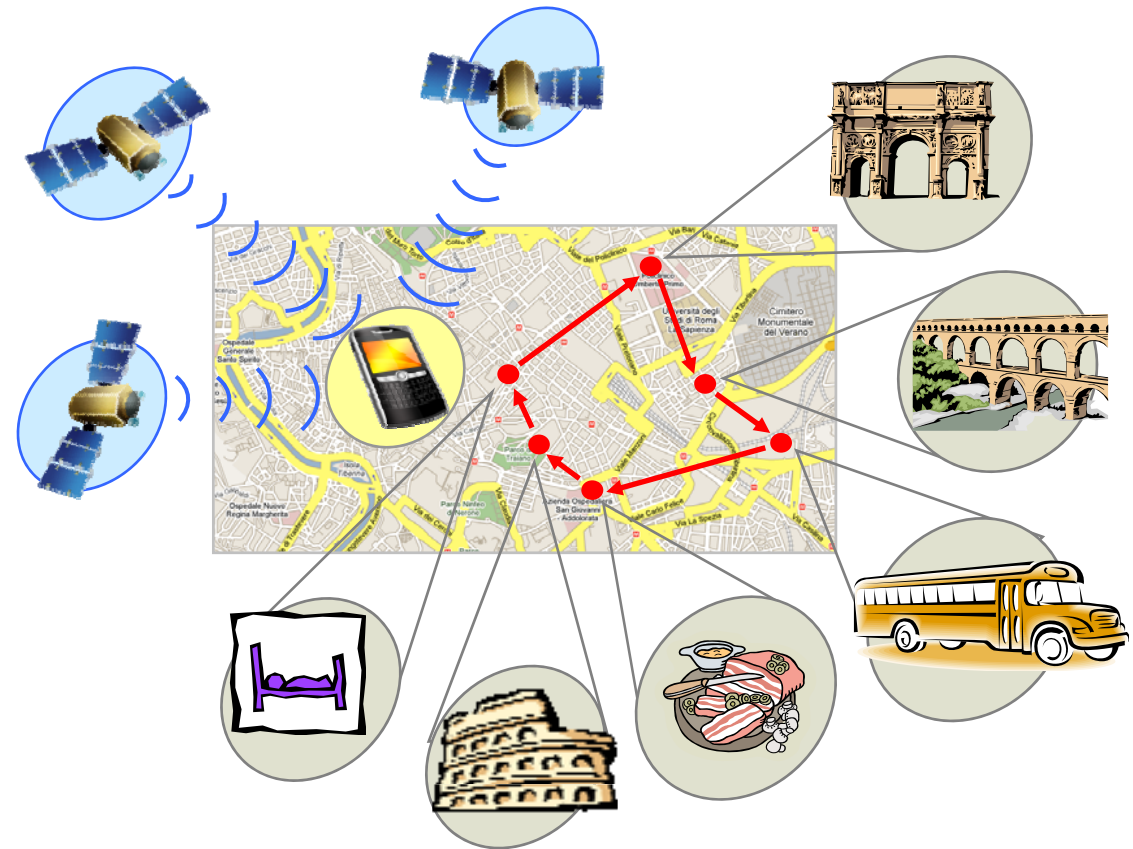
In future

today (iPhone/Yahoo )



# Examples for Business Incubation at cesah

- **FAROL** – an **intelligent city guide** that accompanies the tourist before, during and after his visit
- displaying **current location and orientation** and **nearby Points of Interest** in an **interactive map**.
- Enhances the visitor's experience
- Intelligent & adaptive in real-time
- GNSS and digital map data
- Developed for Smart-Phones
- Free of charge for users



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# Examples for Business Incubation at cesah

**mobile life** offers and runs universal mobile solutions and services in the application area of GPS and Galileo – working together with handy, smart phones, BlackBerry and special units for:

- GPS-tracking of humans, animals and Lorries / Cars
- mobile Solutions for Geriatric usage including dementia
- mobile Telemetry – Solution for Humans and Trucks
- Mobile Navigation on plants and buildings

[www.mapabox.de](http://www.mapabox.de)





Imagine ...



Positioning this ship...on the open sea ...  
with a few centimetre accuracy ...  
in real-time!





## High Accuracy GNSS Solutions



We focus on high accuracy GNSS solutions. As high accuracy GNSS solution provider we can support you to obtain the results you want efficiently and accurately. Some interesting applications where PosiTIm can support you with the GNSS analysis are:

- ✓ Real time orbits and clocks (RT-PPP)
- ✓ Seismic deformation monitoring
- ✓ Volcano activity monitoring
- ✓ Tsunami early warning system (Real Time)
- ✓ Weather predictions
- ✓ Climate monitoring
- ✓ Space weather: Ionosphere monitoring



PosiTIm can supply the required software, make software adaptations, supply training, configure and set-up your processing, or even take care of the processing for you.

# Contact



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