

# GEONETCAST Study Project – Project Plan (Deliverable)

*Group: Trame, Düren, Hinz*

## Who is involved, roles (project organization)

Johannes Trame (Project Leader, Project Management, Analyst, Developer)

Martin Düren (Analyst, System Designer, Developer)

Matthias Hinz (System Designer, Quality Management, Software Developer)

## Context

GEONETCast is a global network of satellite based data dissemination systems providing environmental data to a world-wide user community. It is proposed as a low cost- and user-friendly solution in order to obtain a vast ranges of essential environmental data in real-time. The data is without any license restrictions while being used for education and research and covers critical areas, including public health, energy, agriculture, weather, water, climate, natural disasters and ecosystems. The institute for Geoinformatics (IFGI) decided to install and set up a GNC ground receiving station for first time in 2009. In an experimental project phase (winter term 2009) some prototypical applications have been developed by students in order to gain some initial experiences with the data on different architectural layers. The aim is now to develop reference architecture for integrating the GNC data stream into a spatial data infrastructure in order to make the received data useable and accessible for non-expert users (customers). Therefore the whole process chain (receiving, storage, management, preparation, distribution of the data) need to be considered.

## Objectives:

Following this architecture one representative building block will be implemented which will result in an operational offering for IfGI and other institutes of the GeoSciences department (hopefully as part of the planed SDI shared by different departments). We try to link the building block to a reasonable use-case scenario since many functional requirements might be determined by user behavior and requirements. On a more abstract level the overall objectives can be determined as following:

- (re)work / set-up of existing base infrastructure:
  - configuring the ground station and data server :
    - management of incoming data
    - effective copy process from ground station to data server
    - management of data storage capacity
- automated processing / preparation / deployment of at least one product
- integration into a SDI service framework (support *publish/register*, *bind*, *execute* products)

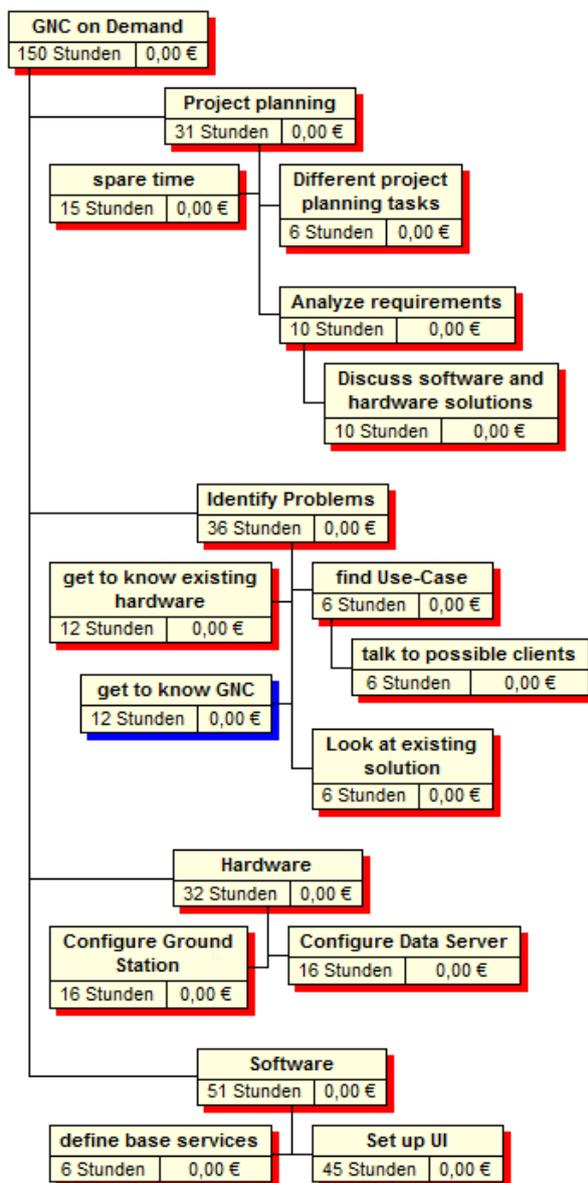
## Methodology:

In the initial phase of the system development and implementation lifecycle, system requirements have to be specified and potential customer (who is a stakeholder) be

identified. The system requirement specification includes the definition of functional and other requirements. The functional requirements need to be obtained mainly from the customer. In this early phase a high-level embracement of detailed listing of functional requirements might be sufficient. The business analyst will do this in a traditional interview style with potential stakeholders (e.g. from the institute for landscape ecology). At the same time the existing system infrastructure need to be revisit and known drawbacks have to be documented.

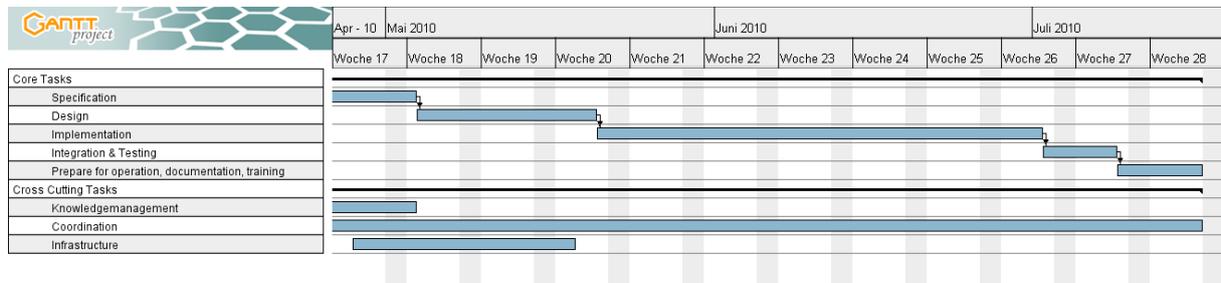
Since we have built the whole system/architecture around the existing core components, we plan to apply an aspect-oriented software development (AOP) paradigm. Using the AOP we have to decompose the entire system / architecture in different aspects (modules), which have to fit the overall program logic flow. Most modules will thereby address non-functional requirements (but crosscutting concerns), while only the pivot modules focus on functional requirements.

### Work breakdown structure



## Schedule, Milestones

- Until 11.05. use-case specification, high-level embracement of requirements
- Until 20.05. detailed listing of requirements, draft system design
- Until 30.05. detailed work packages, infrastructure reworked
- Until end of June implementation
- Until 06.07 integration, testing



(For a bigger version please refer to: <http://xlurl.de/R3x6iP>)

## Ressources, workplan

	Johannes Trame	Martin Düren	Matthias Hinz
Project Planning	50	25	15
Is-Analyse	45	25	15
Infrastructure	30	50	60
Software	25	50	60
	150	150	150

## Risks

- Administrative/Political Risk: Dependence on systems administrators and other groups for changing basic infrastructure and setting up new servers may cause a delay in scheduling
- Security Risks: Since server a reachable by static IPs one has to take care about updates aso.