

High performance MAss market GNSS receiver muLtistAndard ready for mARket

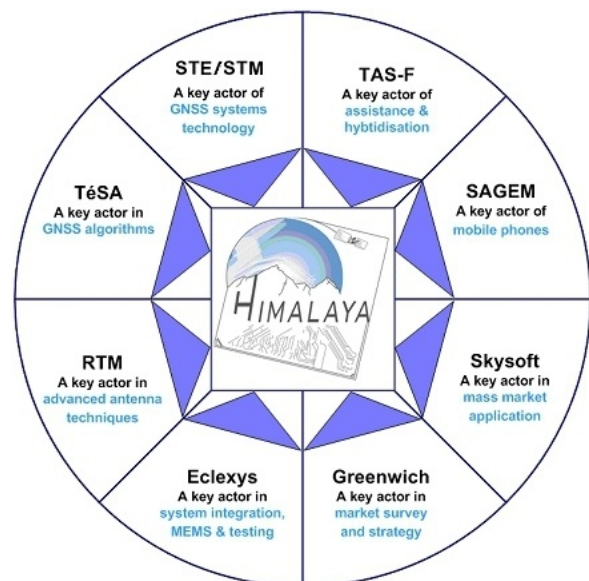
The activity is focused on the design and development of a "ready-to-market" single chip GNSS mass market receiver for GPS, EGNOS and GALILEO signals.

Based on the wide expertise of STMicroelectronics in building high performance, low power consumption receivers for the mass market and on the large experience and involvement of the consortium partners in the different domains (mass market AGNSS leading role, aiding techniques, 3gpp, advanced antenna techniques, advanced GNSS algorithms, ...) a baseline has been discussed and defined, covering the principal signal of each satellite system. The starting phase of the activity will allow the partners to perform a trade-off analysis, taking into consideration the market expectation as well as the impact the implementation of additional GNSS signals would have in terms of silicon structure, price and total size of the product. This will enable the design and development of the best adequate GNSS receiver to answer market expectations and customer needs. The final product will be ready for the implementation in all battery powered GNSS devices, particularly mobile phones, without any particular requirements in terms of power of the user terminal.

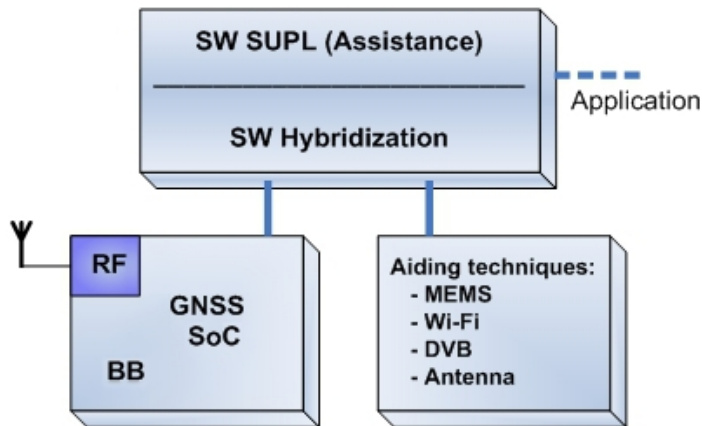
The whole system will be completed by an application to demonstrate the receiver, inherited from former FP6 LBS projects. Some forward looking research aspects, such as for instance advanced antenna techniques, will bring to the EC a global view of challenges the mass market receiver world will have to manage in the future. The presence of a known market survey company within the consortium will guarantee the market viability of the developed solution as well as the market awareness, dissemination and exploitation phase.

Consortium members

The HIMALAYA consortium has a **strong mass market orientation**. This market aspect will be a constant focus all along the project and is one of the key driver of the consortium composition. On the one hand, each member of the consortium has a strong involvement in the mass market location. On the other hand mass market orientation means efficiency and reactivity, leading to a relative small size of the consortium however covering the full range of the mass market GNSS receiver value chain.



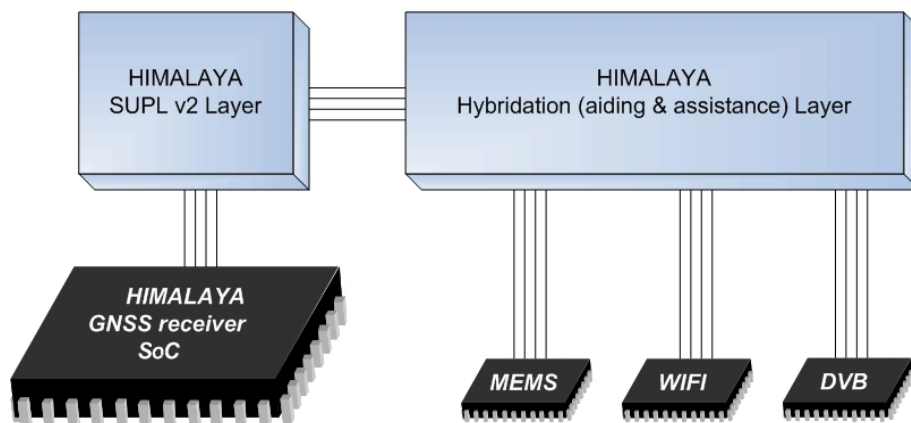
Objectives



The main objective of the project is to develop a high performances and ready-to-market GPS, Galileo and EGNOS chipset.

The key objectives of the project are:

- to develop a full GNSS **System-on-Chip** that includes both **BaseBand** and **RF** Front end. The product will be ready for the market featuring at the same price, same footprint and same power consumption as a GPS-only SoC. This achievement is turned possible thanks to the reuse of past STMicroelectronics design expertise which will be applied to 65nm/55nm CMOS silicon process, and go up to the **integration** into a connectivity platform with a mobile-phone form factor to demonstrate the maturity of the resulting solution.
- The second main objective is to turn the **Galileo and EGNOS differentiators** accessible to mass market. For the achievement of this goal, the ASIC development will be based on deep Galileo-dedicated signal processing researches carried out by highly skilled R&D labs. Besides, the mass market target means very stringent integration difficulties, in particular regarding Antenna integration. For this the integration will also take benefit of deep R&D on antenna optimisation.



- The third crucial objective is to provide to customers a chipset that clearly states a rupture in performances compared with what is available today on the market. For this, the solution will aim at answering to the mass market demands, that is to say more availability, in particular for indoor environments. Thus two axes are adopted for the Himalaya project:
 - Develop the best in class **Assisted GNSS** solution

- Develop a full and tight **hybridised** solution that takes benefit of the most promising sensors that are expected to be present on a mobile platform, among which MEMS, and WiFi
- The fourth main objective consists in going up to the final demonstration of the concept. For this the Hybridised and Aided SoC will be **included in a platform for mobile and personal applications (such as mobile phones, personal navigation devices and tablets) integration**, and a real application will be used, to demonstrate the usability of a solution in a real mass market environments, and overall to emphasize the added value of Galileo and EGNOS in a mass market application environment.

Main achievements obtained during the second project period

In WP3000 the following tasks and associated deliverables have been successfully concluded:

- RF Subsystem Architecture Design and Justification
- Baseband Subsystem Architecture Design and Justification
- External Sensors Subsystem Design
- Subsystems interface document
- Reference Design and Pinout
- AGNSS Server and Client Design

Project website: <http://sites.google.com/site/himalayafp7/>.