ANAVS – Advanced Navigation Solutions

Company Presentation

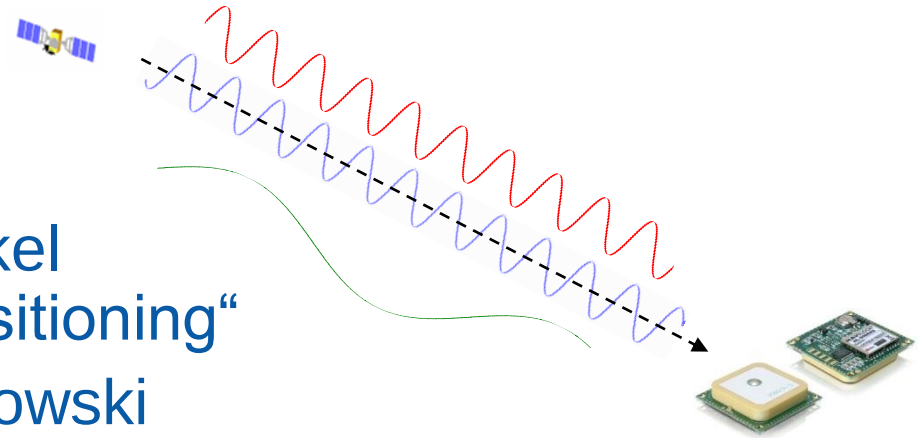
1. Q. 2012

Who we are

- Company founded as GmbH
- Spin-off of the Institute of Communications and Navigation, Technische Universität München, Germany
- Team
  - Dr.-Ing. Patrick Henkel
  - Dipl.-Ing. Peter Schmitz
  - Dipl.-Ing. Patryk Jurkowski
  - Prof. Dr. Christoph Günther
  - Dipl.-Ing. Juan Cardenas
  - M. Sc. Sonya Spiridonova

Lehrstuhl für Kommunikation und Navigation

History



- Dissertation of Patrick Henkel
  „Reliable Carrier Phase Positioning“
- Diplomarbeit of Patryk Jurkowski
  „Reliable attitude determination with GNSS: Gaussian a priori knowledge and Kalman filtering“
- Bachelor Thesis of Patryk Jurkowski
  „Baseline constrained ambiguity resolution with multiple frequencies“
- 31 presentations at international conferences
- 7 journal publications
- 3 international patents

Successes

- Strong academic and industrial background
- 1. Price in Bavaria in European Satellite Navigation Competition/ Galileo Masters 2010
- Supported by
  - European Space Agency (ESA)
  - Federal Ministry of Economics and Technology (EXIST)
  - Bavarian Ministry of Economic Affairs

EUROPEAN SATELLITE NAVIGATION COMPETITION 2010
powered by T

esa

eXIST
Existenzgründungen aus der Wissenschaft

business incubation centre
Bavaria
managed by AZO

Our Products

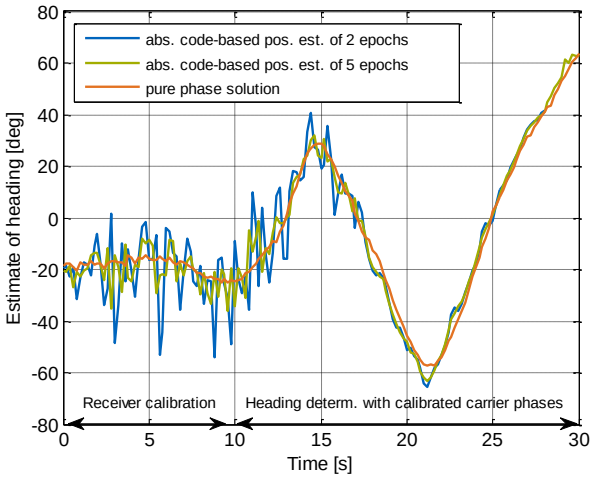
- Accurate and reliable attitude determination systems
- Reliable Single Frequency Carrier Phase based Attitude Determination Receiver System (SF-ADRS)
- Reliable Single and Multi-Frequency Differential Carrier Phase Positioning Software (SF/MF-DCPS)
- Training and technology assistance for beginners and experienced users of GNSS

Reliable Single Frequency Carrier Phase based Attitude Determination Receiver System (SF-ADRS)

- Low cost solution providing a 5 Hz heading information in real-time
- 1 sigma accuracy of 0.5°/ baseline length [m]
- Hardware system consisting of two receivers with ANAVS patented kinematic on-board phase calibration
- Heading information provided via USB 2.0 or RS 232, optional display

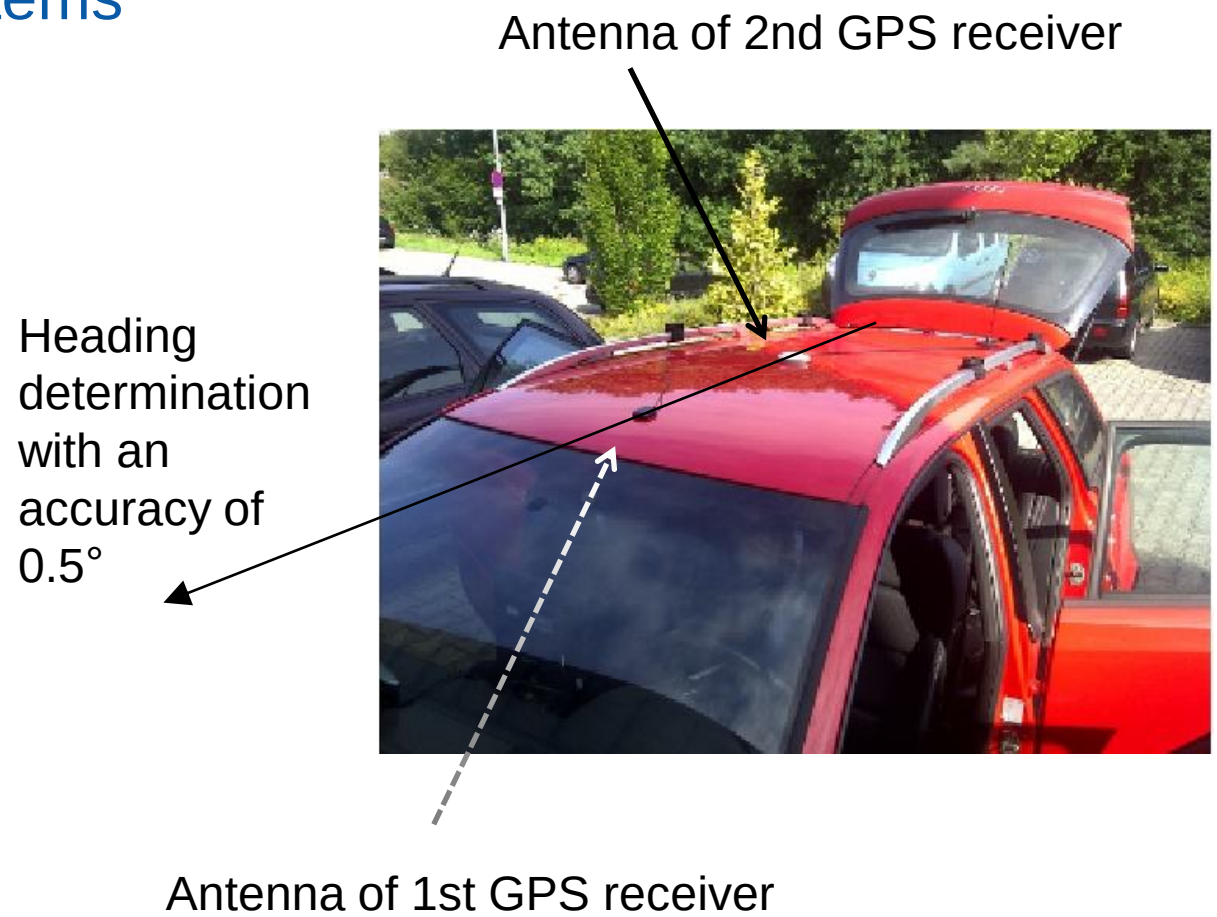
Reliable Single and Multi-Frequency Differential Carrier Phase Positioning Software (SF/MF-DCPS)

- Kinematic carrier phase positioning software
  - Centimeter accuracy and an integer ambiguity resolution
  - Error rate of less than 1e-6
  - ANAVS patented
    MAP integer ambiguity estimation method
  - User definable parameters
    - linear combination properties
    - statistical a priori information
    - arbitrary scaling of the geometry
    - arbitrary scaling of the ionospheric delay
    - preferred wavelength.
- Software
  - Distributed as DLL/ MEX-files, which can be easily embedded into both Matlab and C/C++ programs for real-time implementations
  - Some exemplary observation and navigation files

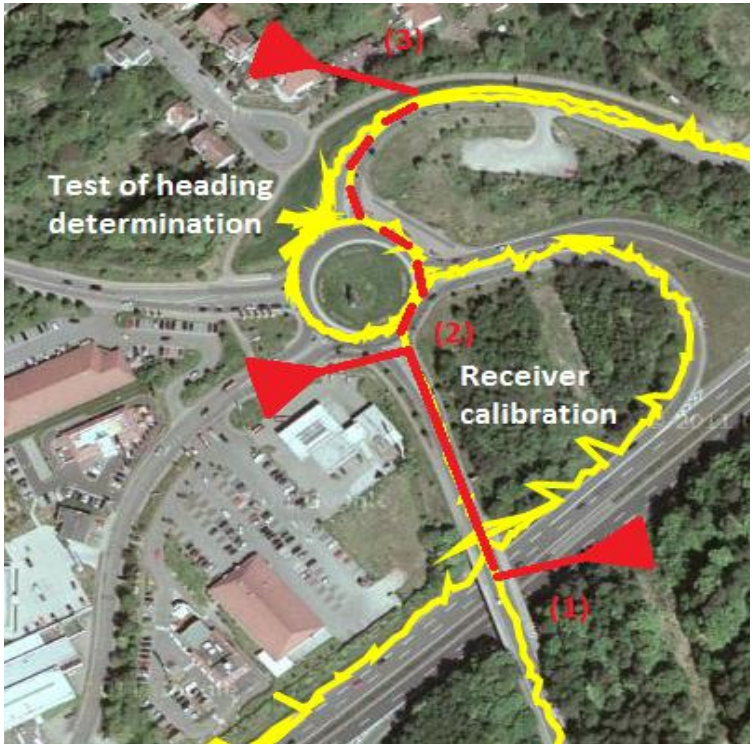


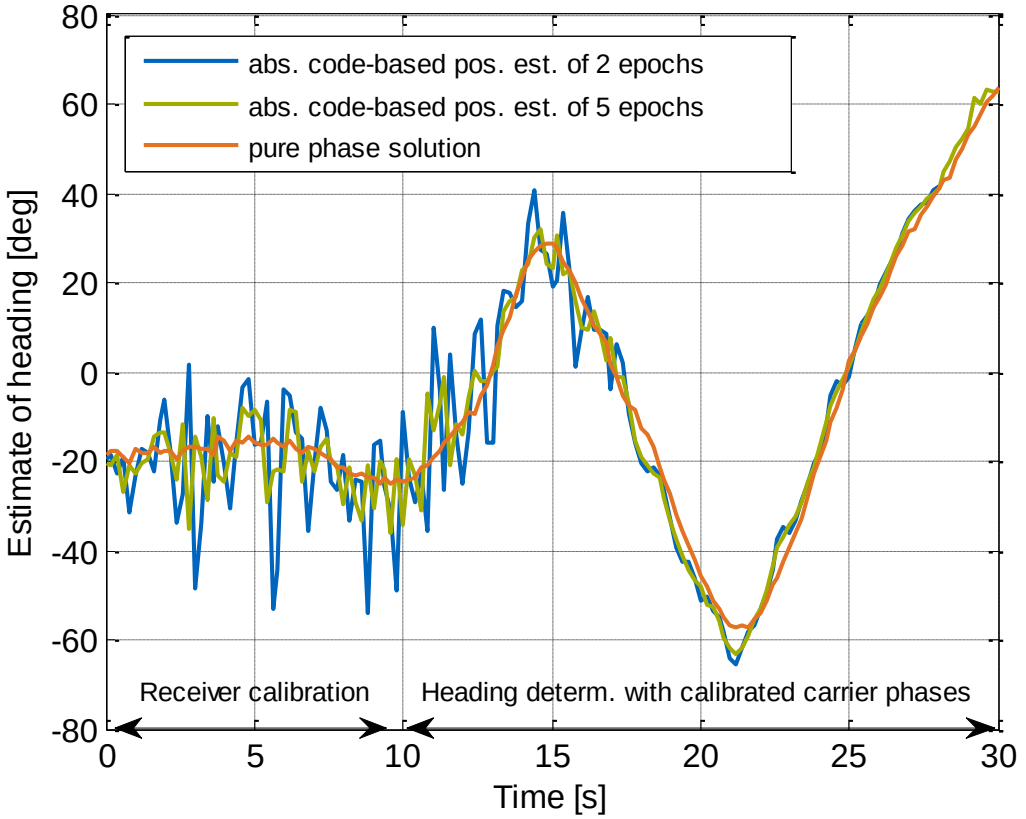
Applications

- Vehicular Systems



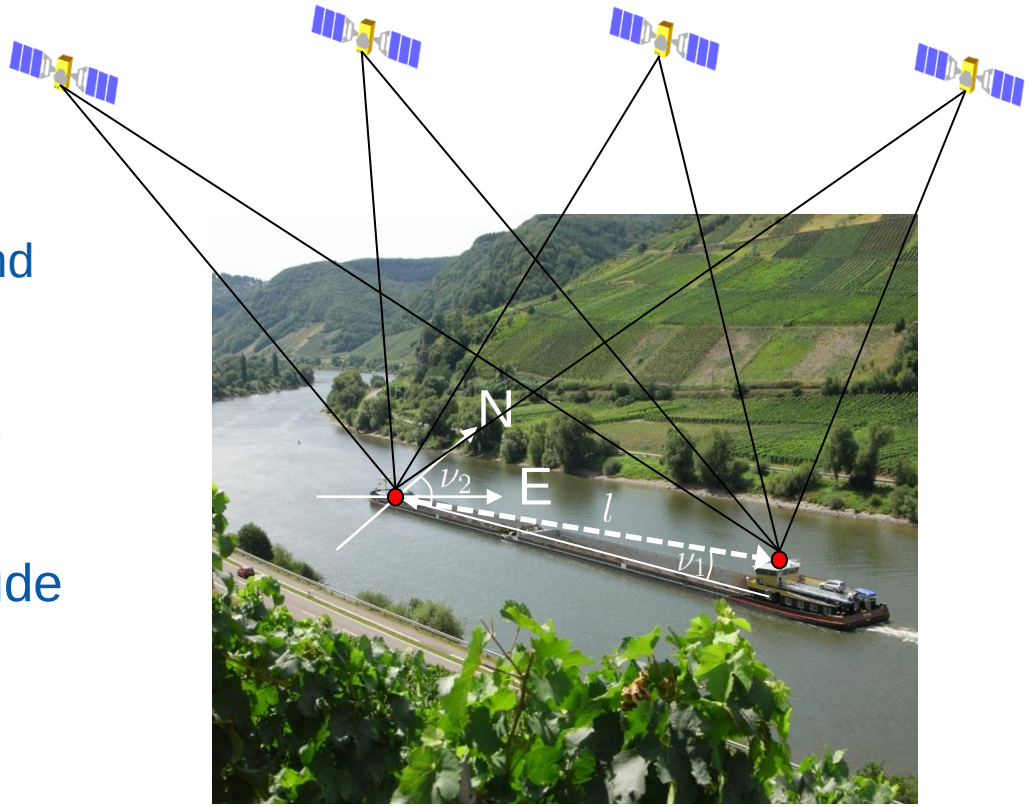
Applications





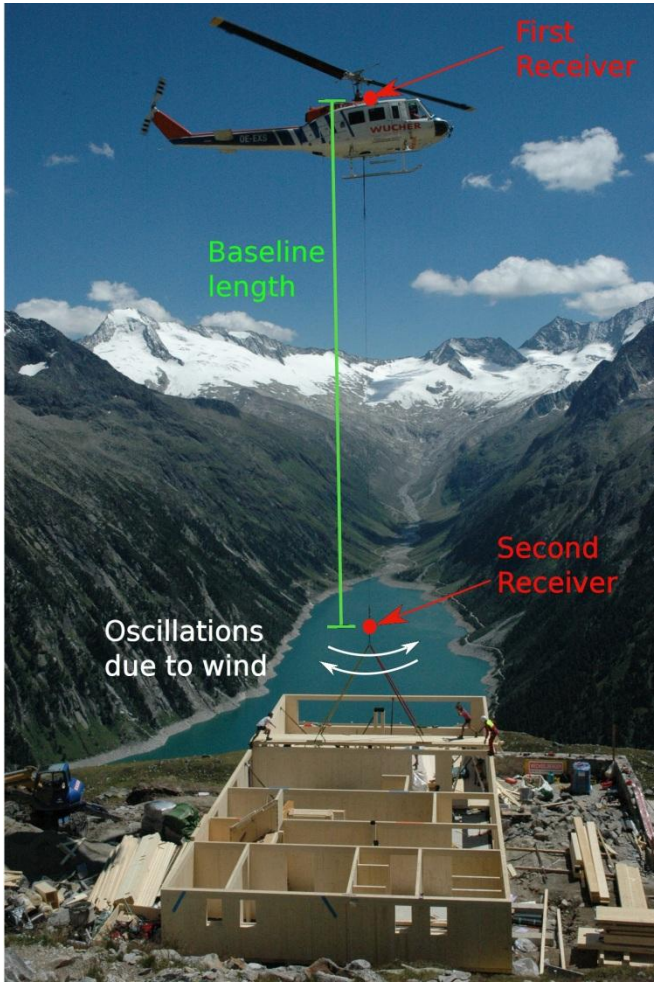
Applications

- Navigation assistance for freight vessels and cruise liners
- Situation today:
  - Navigation using Radar and Inertial sensors
  - More than 30 severe accidents p.a. in Germany
- Our System:
  Reliable and accurate attitude and position determination using GNSS
- Sensor fusion possible



Applications

- Pilot Assistance System for Helicopter Load Stabilisation
  - Placing of loads by helicopters close to humans
  - No line of sight between pilot and load
  - Dangerous situations for ground staff and pilot due to oscillations of the load
- Construction of mountain huts and their airborne supply
- Emergency rescue services



Contact

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