

ARIANNA Black Box

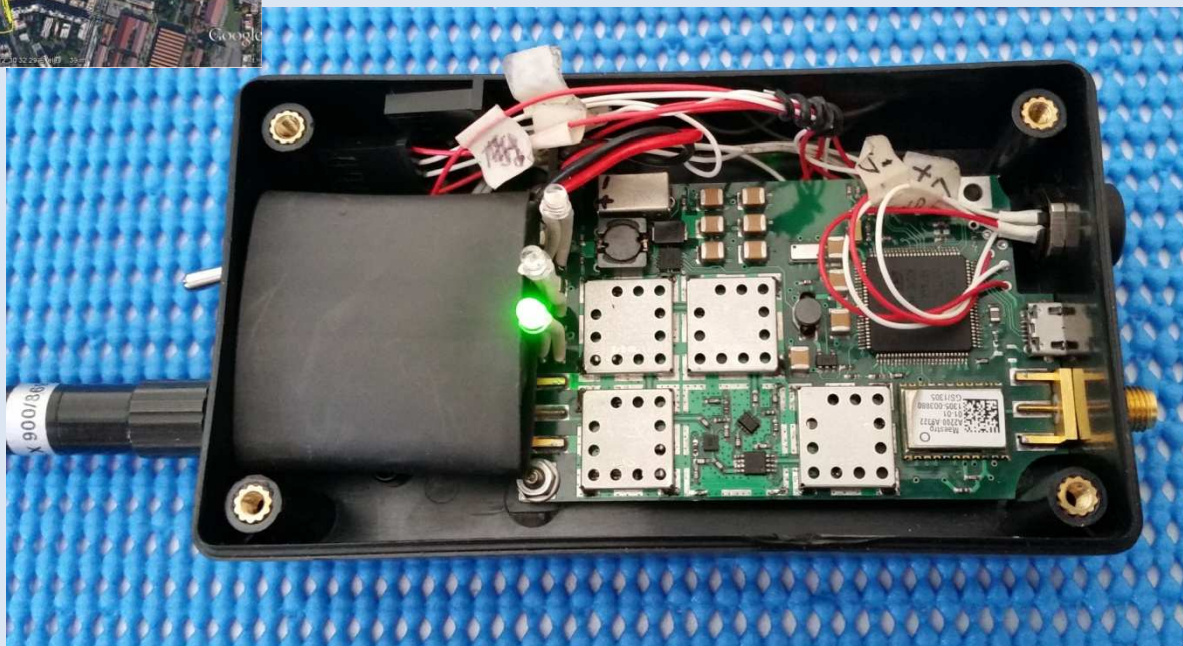
BB D00231400

After five years of internal research on indoor pedestrian localization, DUNE presents a new release of the Black Box (BB) "all in one", which includes in its small space all the important devices. Its main features are: the inclusion of the communication infrastructure and a new, very flexible architecture.

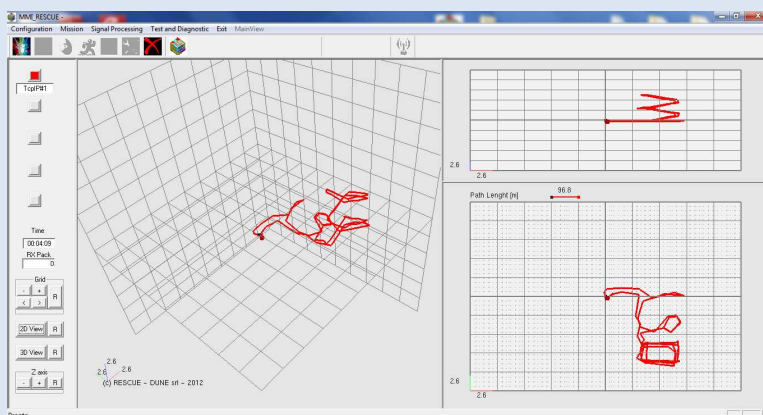


Applications

- Pedestrian localization in caves, undergrounds, complex buildings or GPS-denied environments
- Fast mapping of unknown areas
- Firefighters support for risk-critical missions
- Policemen and Military forces support



Estimated walked path in 3D (left) and its horizontal and vertical projections (right)



Main ARIANNA BB Features

- A general interface, suitable for a wide class of sensors (from low-performance and cheap, to high performance and very expensive)
- A digital radio modem, so to send the localization data to a remote control centre
- Equipped with a GPS receiver, so to increase the localization accuracy when satellite signals are available
- The rechargeable internal battery provides 40 minutes of system autonomy
- An internal barometric sensor is employed to improve the vertical position estimation
- The USB interface used to exchange data with a host computer and recharge the internal battery
- A Bluetooth interface is available



System features in brief

Several sensors can be interfaced to BB, if they share a common interface

Radio modem:

European SRD Band from 863 to 870 MHz

North American ISM Band from 902 to 928 MHz

Chinese WPAN Band from 779 to 787 MHz

RF output power compliant with the international regulations

RF output burst up to 2 W for complex escape situations

Barometric measurement (10 – 1200 mbar), resolution 20 cm

GPS receiver with jamming detection and removal functions and SiRFaware for constant Hot Start

ARM Cortex-M4 32b MCU on board, operating at 168 MHz for the computation of the localization data

Possible sensor to be used with BB



Dune can also provide a customized product, fully compliant with the specific requirements provided by the Customers

