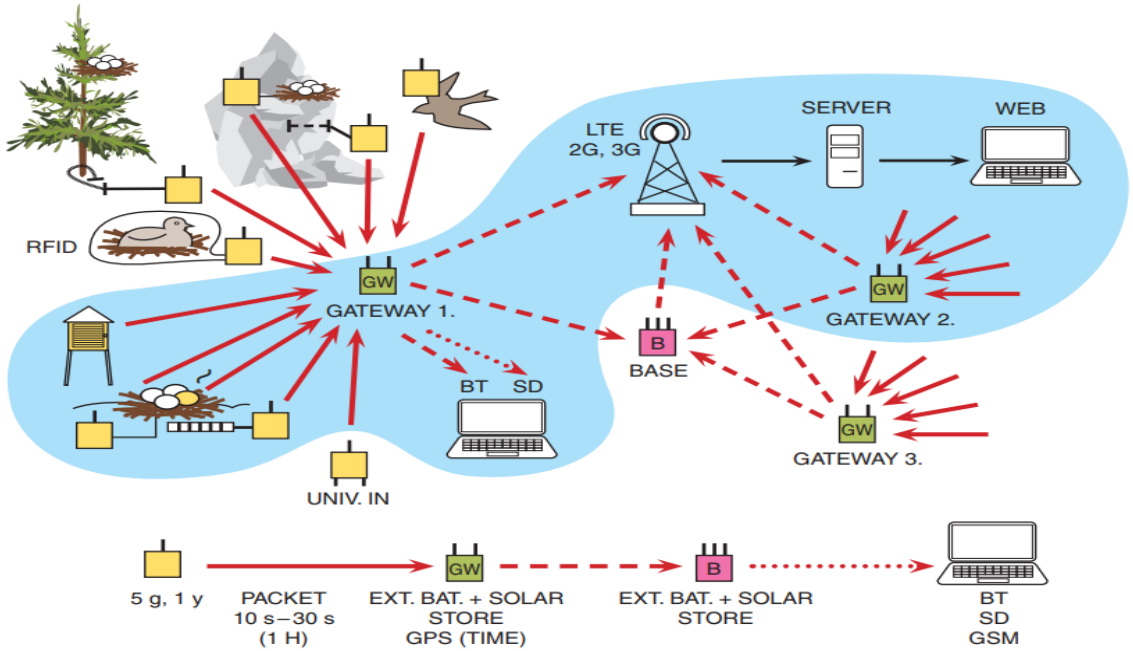
ANITRA LoNet



Universal wireless sensor modules for intensive data collection developed for research and protection of sedentary species. Allows for very complex studies with a wide range of sensors/devices implemented in parallel. The IoT technology-based system offers flexible options to adjust solutions according to customer particular requirements. In the default setup, the data from a range of low-power long-life miniature modules are transmitted in predefined schedules towards local gateway (GW) and further on (if desired and possible):

- directly to GSM (2G/LTE) network and subsequently to Anitra servers (data stored and available in ANITRA web platform)
- centralized (from multiple local Gaytways) to “base” station which either transfers the data long distance to the Internet or stores it for local download
- mirrored realtime via BT to user mobile device (configuration and operation check of the system)
- stored on SD card of each GW (chronologically, labeled with GPS time)

Dedicated applications specially developed for nidobiology research:
Synchronous data collection from multiple spatially installed temperature and other sensors:

- implanted in dummy eggs (up to 16 temperature sensors, accelerometer, magnetometer, humidity sensor, prescheduled sampling from 10 to 60 seconds)
- collection of meteorological data as a support background / environmental measures
- generation of 3D temperature (and humidity) maps of nests (or nest holes) – various distances and soil depths sampled
- RFID detection – confirmation and identification of RFID marked individuals
- more (different) sensors possibly deployed based on particular project requirements

Applications developed for a monitoring of small birds and mammals with miniature long-range transmitters (variant with GPS module available)

- Anitra LowNet solar tags 5g (GPS, low data sampling frequency e.g. 3 positions/day)
- Anitra LowNet battery tags 10g (w/o GPS, offers the option of position approximation in GW network; suited for night (dense undergrowth) species

Applications tailored for nest protection

- Indirect activity check by nest basin temperature measurement
- Security sensors of various types detecting intrusion into nest site safety perimeter