Underwater Gliders Unified Visualization Interface

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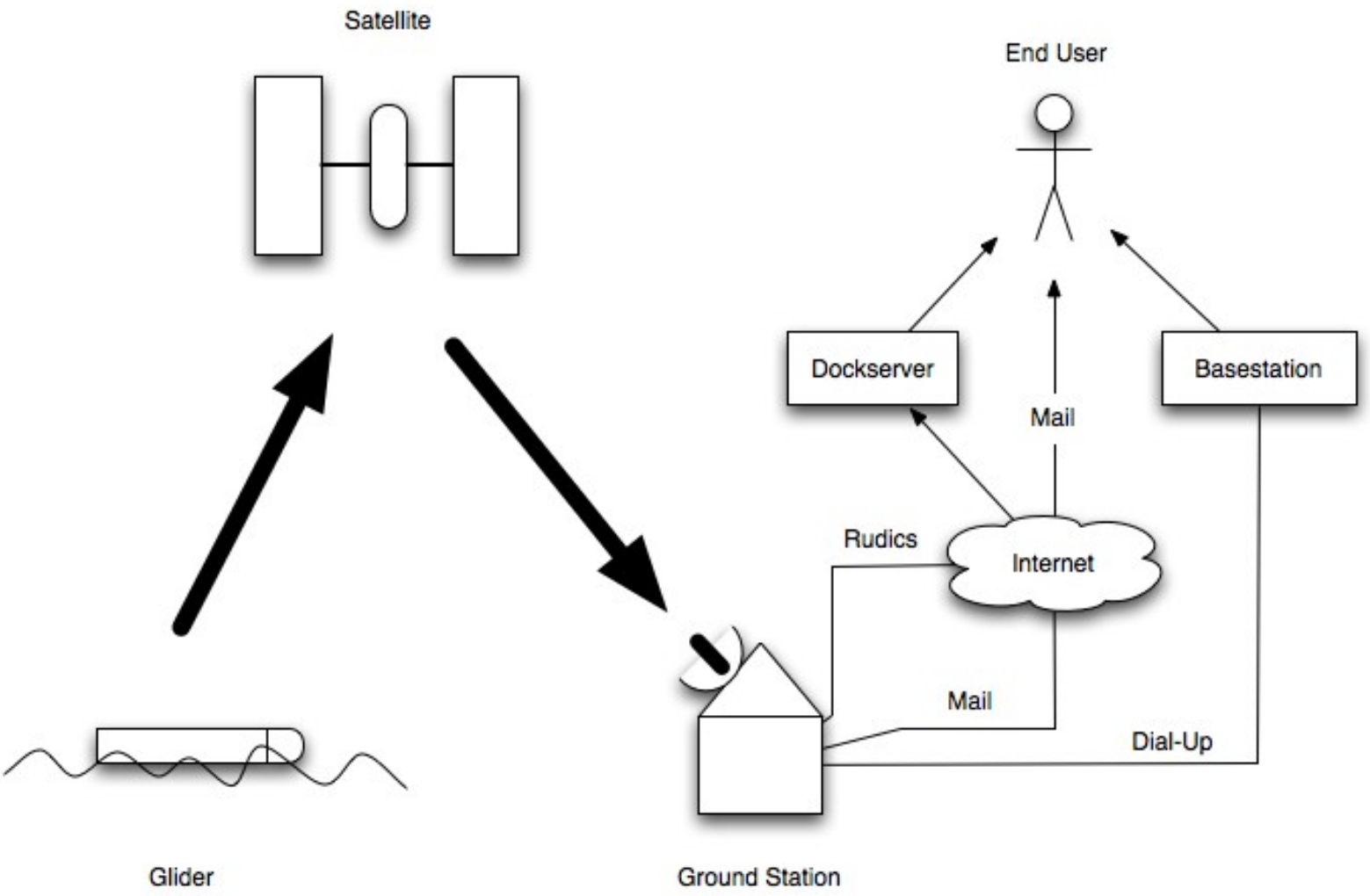
Goals

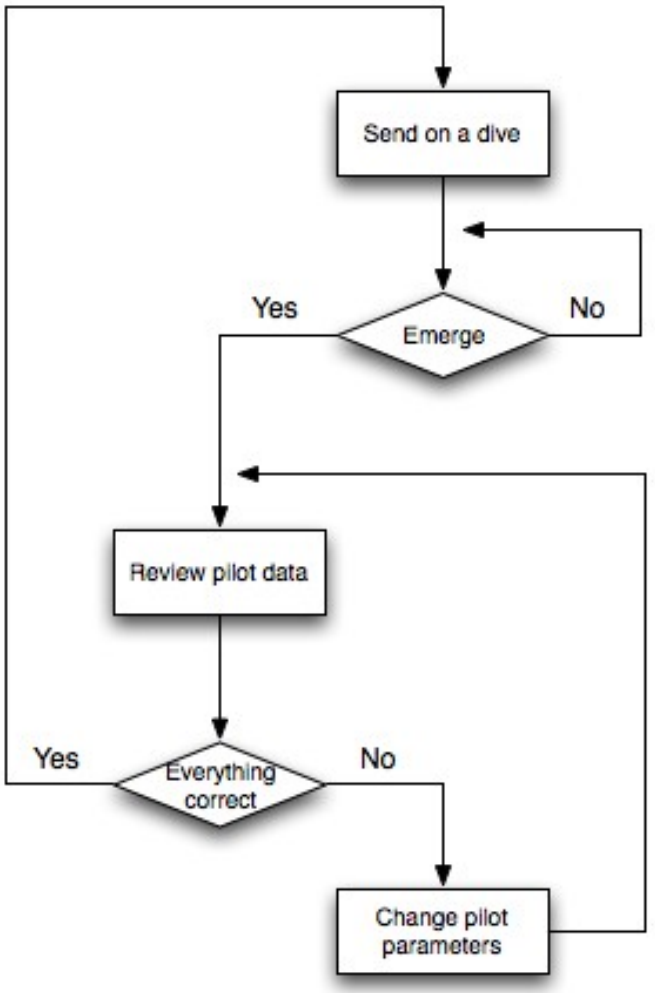
- Create a system for glider data visualization for PLOCAN
- Create a system for managing PLOCAN glider fleet:
  - Mixed glider fleet: slocum, seaglider, spray and others in the future
- The system should be part of PLOCAN data infraestructure
- Web software based system

First Phase: Study glider use and management

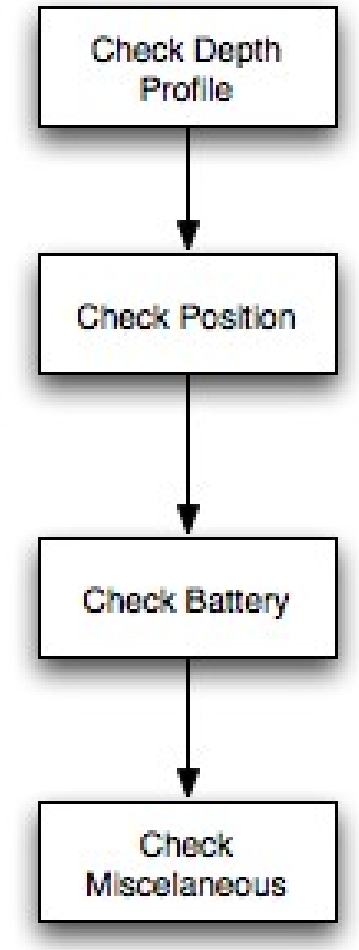
Gliders common data flow



Pilot Common Tasks



Pilot Common Tasks: Review Pilot data



Most piloting tasks are common to the three technologies

Mixed technologies fleets are more common everyday

Pilot Common Tasks: Problems

- Mixed fleets:
  - Different software tools
  - Different sources of data
  - Different servers and configurations
  - Treat gliders as a fleet is not trivial

Phase 2: Study available software

Gliders Software Solutions

- Slocum
  - Webb provide tools for piloting, data plotting and path planning and painting.
- Seaglider and Spray
  - Matlab scripts for plotting piloting related data.
- EGO
  - Centralized server to control glider fleets.
  - Sensor inventory

Gliders Software Solutions

- Except from EGO solution, no effort on interoperability.
- No free and open platforms for organizations **right now**
- Free solutions to inspect data (igloo)

Gliders Software Solutions

- In the end each group develop their own tools:
  - Path tools based on GIS (Google Maps, Google Earth …)
  - Visualizing tools based on scientific programs (matlab, python … etc)

Conclusion of the phase 2

- There is not a single solution to cover all our needs
- Start the development/integration of a software for PLOCAN
- Reproducing one problem → Segmentation
  - Different lines of work for each team with gliders

Develop an open software platform

Unified Glider Control Interface

- Based on open technologies and standars if possible
- Open code repository on internet
- Community website as central part on the strategy
- Effort on sharing

It may become the integration of different softwares

Phases of the development

1. First Phase. Beggining of Q3 2011.
   - Glider map path and Piloting Plots interface
   - Community Website
   - Open control version site
2. Second Phase.
   - Incremental features
   - Community Patches
   - Forks?
   - Glider fleet management.
3. Third Phase.
   - Piloting module.

Problems

- Proprietary file formats
- Choose the maps technology (Open vs reliable)
- Create the community
- Manage the community
- Involve Manufacturers?

Final objectives

- Develop a tool for help in the piloting of glider fleets
- Create a system flexible enough to be integrated with different data systems
- Special effort on the GUI: map and plotting tools
- Free implementation
  - Free source code on the net
  - Use of free and open technologies
- Give organizations and groups the option to choose

Questions