Memorandum of Understanding

Scope

This documents provides the general terms and conditions for the collaboration of external universities and/or companies (in the following: partners) and the TU Vienna, Department of Geodesy and Geoinformation, Research Groups Photogrammetry and remote Sensing, (in the following: GEO) in the software project OPALS (Orientation and Processing of Airborne Laser Scanning data).

Partner: …………………………….

Preamble

- GEO appreciates collaborations with external scientific as well as non-scientific institutions.
- A potential collaboration must be organized in a way, that the profit is higher than the effort for both, GEO and the partner.

Terms and Conditions

- Contributions of the partner to the OPALS system can either be by providing as new modules or new scripts (in the following: components).
- The source code of the developed components will be provided by the partner in order to be integrated into the source code repository (CVS) of GEO
- The partner has the right of use for all his proprietary components free of charge.
- The partner can grant this right of use of his proprietary components to third parties.
- The rights of exploitation for components developed by the partner have to be negotiated bilaterally. This becomes relevant, as soon as any reflux is generated from the proprietary developments.
- For the development time, the partner will obtain full licenses for all those existing OPALS modules required for the actual research & development work at no charge. Beyond that, unrestricted licenses for existing modules have to be negotiated bilaterally.
- GEO has the right to overtake the contributions of the partner into the regular OPALS distribution, given a bilateral consensus concerning the right of exploitation. In particular, GEO has the right to distribute all those components for which no monetary reflux is generated.
- In order to be overtaken into the OPALS distribution, the developed components are expected to be running reasonably stable and the involved algorithms to be fully documented. Within the documentation, links to external references (i.e. scientific papers) describing a certain algorithm or workflow in more detail with proper credit to the OPALS software system are appreciated.

- Contributions may either become part or the OPALS base system (regular distribution), or be provided as add-ons. GEO is responsible for the administration of the distribution.
- To be overtaken into the OPALS distribution, the developed components have to pass an approval procedure. This involves the obligation for the partner to explain the technical details of the algorithm, workflow and implementation to OPALS developer team.
- GEO is, in return, responsible for the maintenance of those external contributions being part of the OPALS distribution. This concerns adaptations in response to a change of the underlying software framework, the change of development environments, and the like, but does not include improvements of the implemented algorithms.

Technical matters

- OPALS is not an open source project.
- In particular, the OPALS Data Manager (ODM, i.e. high performance access to the point cloud) will be provided via (static and dynamic) libraries and header files.
- The OPALS software framework (moduleBase) will be provided as source code as it is likely, that new modules contribute to the framework (new user defined data types, etc.)
- OPALS is written in C++ programming language. External contributions (i.e. modules) are, thus, also required in C++.
- Python is the preferred scripting language for OAPLS. Thus, new scripts implementing a specific workflow are required as Python code (mandatory) and as shell scripts (optionally).
- The basic software system needed for development of new modules is provided by GEO either via CVS or Secure FTP.
- The existing OPALS modules will be provided as binaries (exe, c++ dll and python dll (pyd)) . Selected modules demonstrating the general way of programming OPALS modules and accessing the ODM will be provided as source code.
- Access to the source code of other existing modules (e.g. for the purpose of enhancements of existing modules by the partner) has to be clarified in case of need.
- The administration of software licensing issues remains at GEO. This also affects the delivery of components developed by the partner.

Remarks

For the startup, it is useful to come to GEO for some days in order to get instructions about programming in the OPALS environment. Furthermore, it is interesting for GEO to get a better understanding what the partner plans to do. This initial discussion may show a way of dealing with the partner's research problems and how to implement these best using OPALS.

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 (Signature GEO)   (Signature partner)