

PC

- » Architecture: X86 / X86_64
- » OS: Windows7 / Ubuntu Linux
- » Language: C/C++, Matlab
- » Compilation environment: BoostBuild

Android:

- » no mobile algorithms for pose estimation so far
- » dense reconstruction probably not feasible on mobile

Development environment



» T4.3 (pose estimation / 2D-3D-matching):

- > Inputs:
 - + Camera images
 - + Current position / view direction
 - + Geo-tagged 3D models
- > Output:
 - + Refined 3D pose

» T4.4 (3D reconstruction):

- > Input: multiple camera images
- > Outputs: 3D models of objects

Algorithms Inputs/Outputs



- » Most imaging libraries are custom (closed source)
- » PC dependencies on 3rd party libraries:
 - > Boost (open source)
 - + Cross platform libraries (threading, networking, asio, regex, graphs, ...)
 - > OpenMesh (open source):
 - + Mesh representation and processing
 - > Intel MKL (closed source, Win/Linux binaries only):
 - + Sparse matrix computation
 - > VLFeat (open source):
 - + Image feature detection and matching
 - > CGAL (open source):
 - + Computational Geometry Algorithms Library
- » Expected dependencies for mobile development (WP4 + WP5):
 - > OpenMesh, VLFeat, Boost may be required
 - > h.264 video decoder for Android:
 - + are builtin interfaces already available in Android? Library suggestions welcome!
 - > Eigen (open source):
 - + Matrix computation

Library dependencies

