Software Engineering Project Weekly Report

3D-KORN

University of Bourgogne

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1 Tasks completed

- Knowledge transfer session from *operation with pointclouds* for all team on the usage of PCL library.
- Issue solved: Fixed building problems with PCL 1.6.0 with MSVC2010 compiler and Qt 4.8.0 for all team members.
- POC progress with pointclouds operation making watertight meshes with Poisson algorithm from PCL library.
- Understood Mesh Handling through `vtkRenderWindowInteractor` class and `PCLVisualizerInteractorS` for customization of mouse and keyboard input commands through GUI.
- Completed the skillset analysis table:

First Name	Managing	Research	UML	OOP	Qt	Documentation
LUCA	1	3	1	1	1	3
EZEQUIEL	2	4	1	1	2	3
BENJAMIN	2	2	1	2	3	3
ROBERTO	2	2	1	4	2	3
UMA	4	3	4	4	3	3
SAVINIEN	3	3	1	4	3	2
ALBERT	4	3	3	4	1	2
DANIEL	3	3	1	3	1	3
NAYEEM	4	3	2	3	2	3
PAMIR	2	4	1	3	2	3
DI	2	2	1	3	1	2

Table 1: Member analysis of skills evaluated from 1 - Beginner to 4 - Excellent

- Assigned the timeline for project development based on availability of members:
  - INSERT GANTT DIAGRAM

2 Issue Handling

- With our current version of PCL (1.6.0) interface through OpenNI is not compatible with KinectV2 and the OpenNI2 interface is not fully implemented. Moreover, the Kinect SDK 2.0, which is the minimum required for interfacing with KinectV2, is compiled with MSVC2012 and is not compatible with our compilation of PCL (MSVC 2010). Two branches of development will try to solve the issue, one trying to install PCL 1.8.0 in Windows to use the Kinect SDK 2.0 and the other will try to interface the Intel R200.

  This has caused a delay in the specification of scanning process and, as a result, GUI and UML work couldn't progress as expected due to the relation with it. Albert and Eze have been reassigned to the Interfacing with sensor team to try and overcome this issue.

3 Work in Progress

- Reviewed KinectFusion and DynamicFusion algorithms as they seem no to be suited for the project due to their complexity and time requirements. We finally decided to use 3D

registration algorithms from PCL library as it will work regardless of the final sensor used (KinectV2 or Intel R200) and development that depended on this particular algorithm is now free to continue.

- Reassignment of tasks for *Interfacing* with sensors team based on priority:

  Tasks:

  - Try to interface with both Intel R200 and KinectV2, to see which one is more compatible and simple to interface.
  - Generate PCL point cloud from scan.

  Members: Pamir, Dani, Albert, Eze.

4 Tasks for this week

- KT session on coding standards for the whole team
- Complete POC and start work on UML design with a Use Case diagram and Class diagrams.