Software Engineering – MsCV : 3D Scanner

By Romain CORSIN and Kevin DESCHARRIERES

Supervise by Jiang Cansen and Strubel David

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Introduction

- Last year projects
- Goal
- The way to follow
  - Debugging
  - Interface
  - Comments

Debugging

- Study of the last year programs and reports
  - Group 1: https://github.com/umaatgithub/3D-KORN
  - Group2 : https://github.com/WajahatAkhtar/Project-S.E
  - Group 3 : https://github.com/AnirudhPuligandla/3D_scanner
  - Group 4 : https://github.com/tazleef/Software-Engineering-Project

Debugging

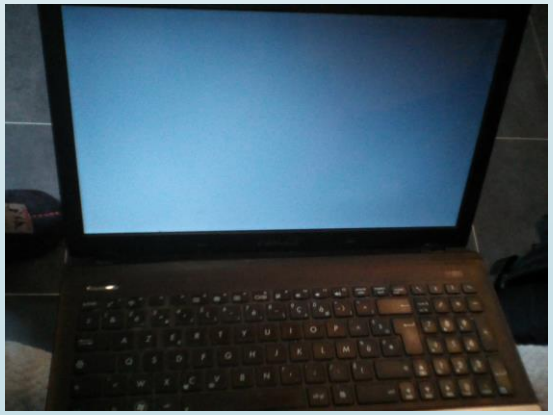
- Necessary elements

Debugging

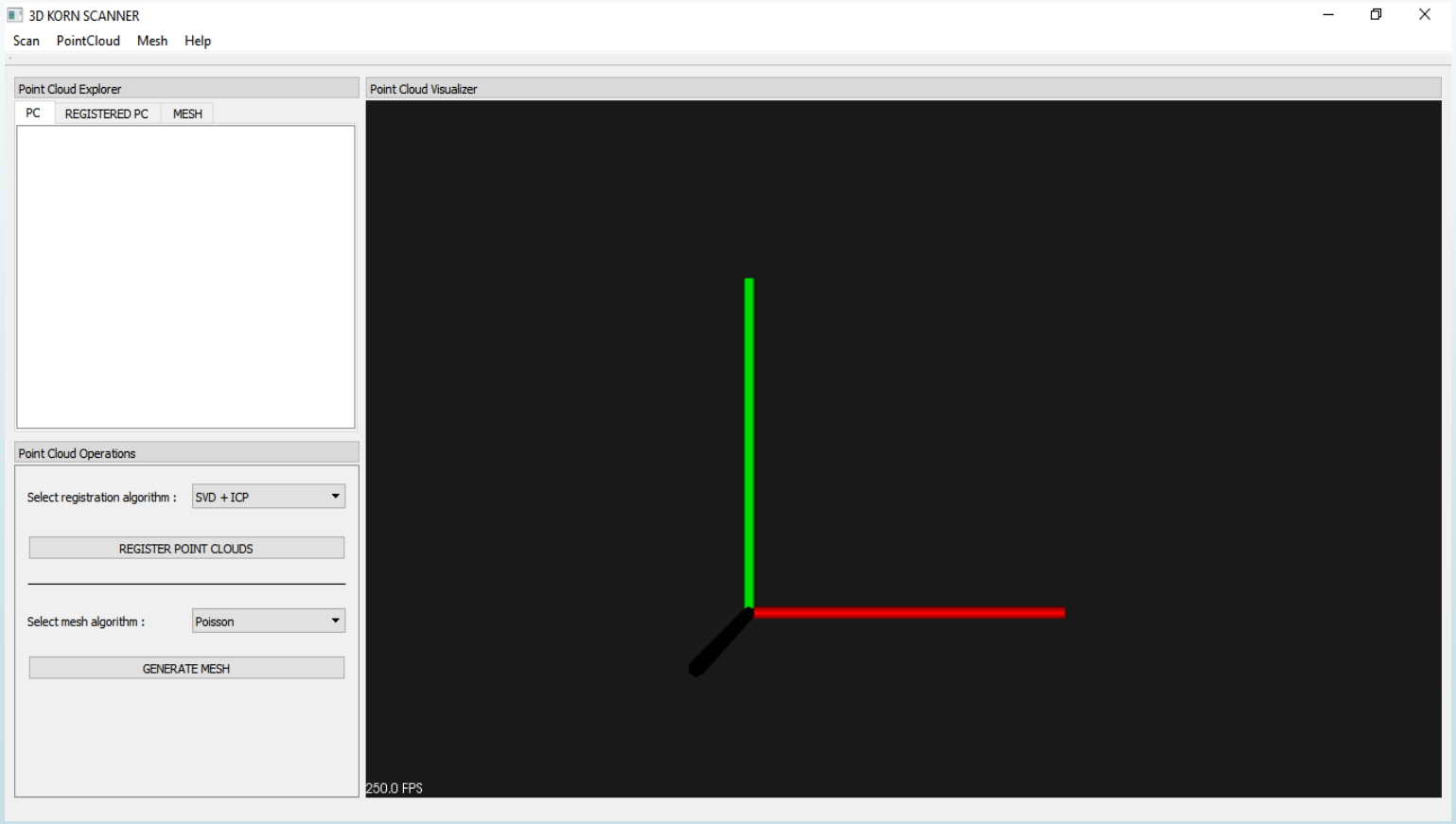
- Necessary paths
  - C:\Qt\Qt(version)\(version)\msvc2015 64\bin
  - QT_QPA_PLATFORM_PLUGIN_PATH
  - C:\Qt\Qt(version)\(version)\msvc2015 64\plugins\platforms
  - PCL_ROOT as C:\Program Files\PCL 1.8.0
  - %PCL_ROOT%\bin
  - …
- .pro paths
  - INCLUDEPATH += "C:\..."
  - LIBS += "-LC:Files1.8.0"

Debugging

- Success



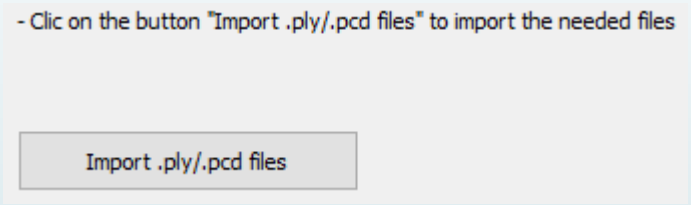
Dead laptop



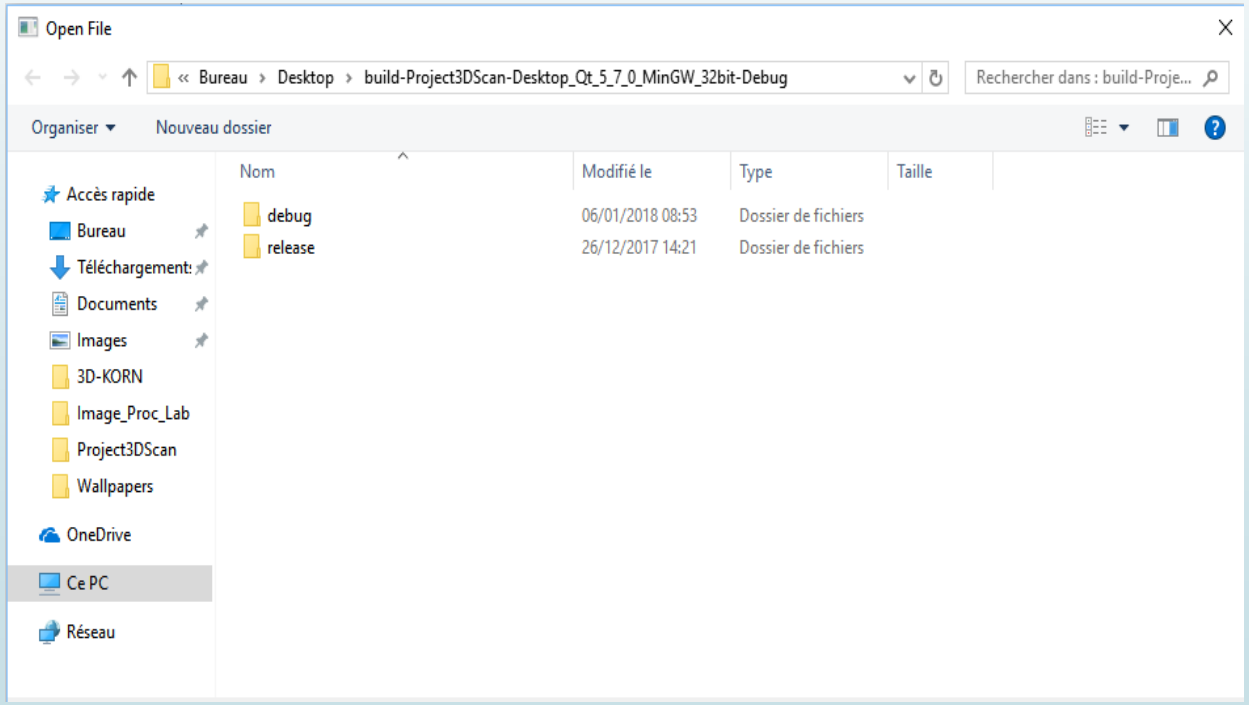
Interface of the 3D KORN SCANNER

Interface

- Button and DialogBox

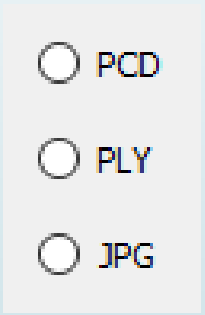


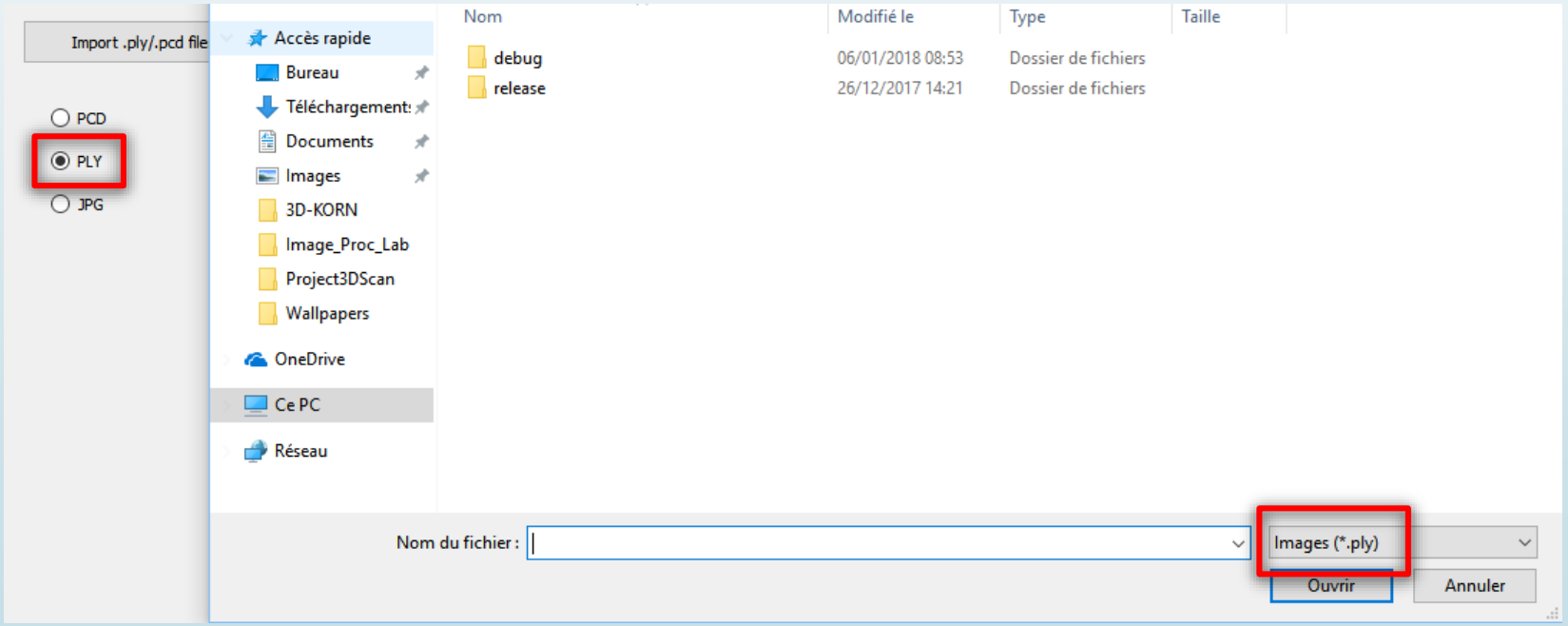
Button to open the dialogBox



Interface

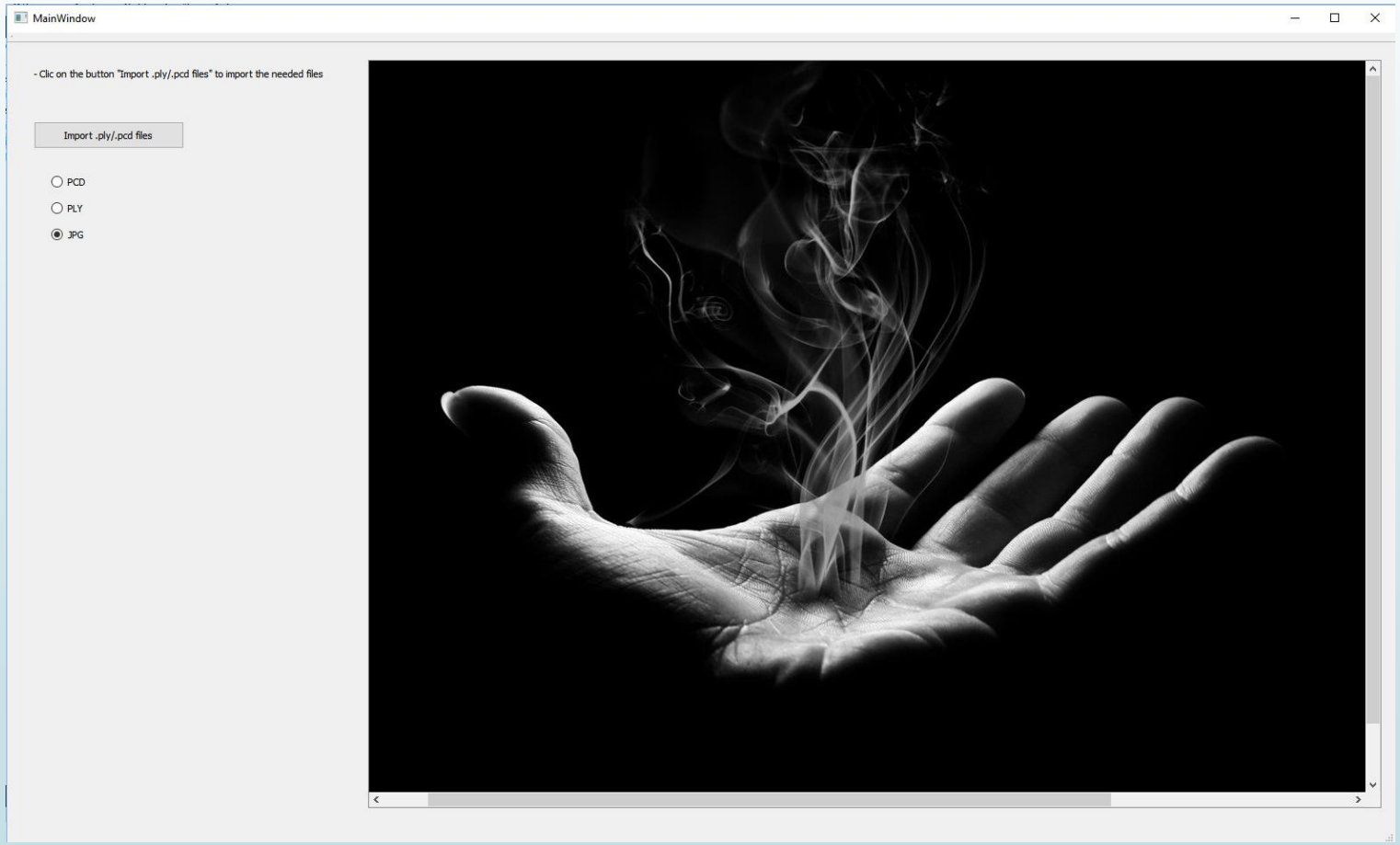
- Radio buttons
  - Different radio buttons to choose the good format of files. (Here jpg is for the examples)



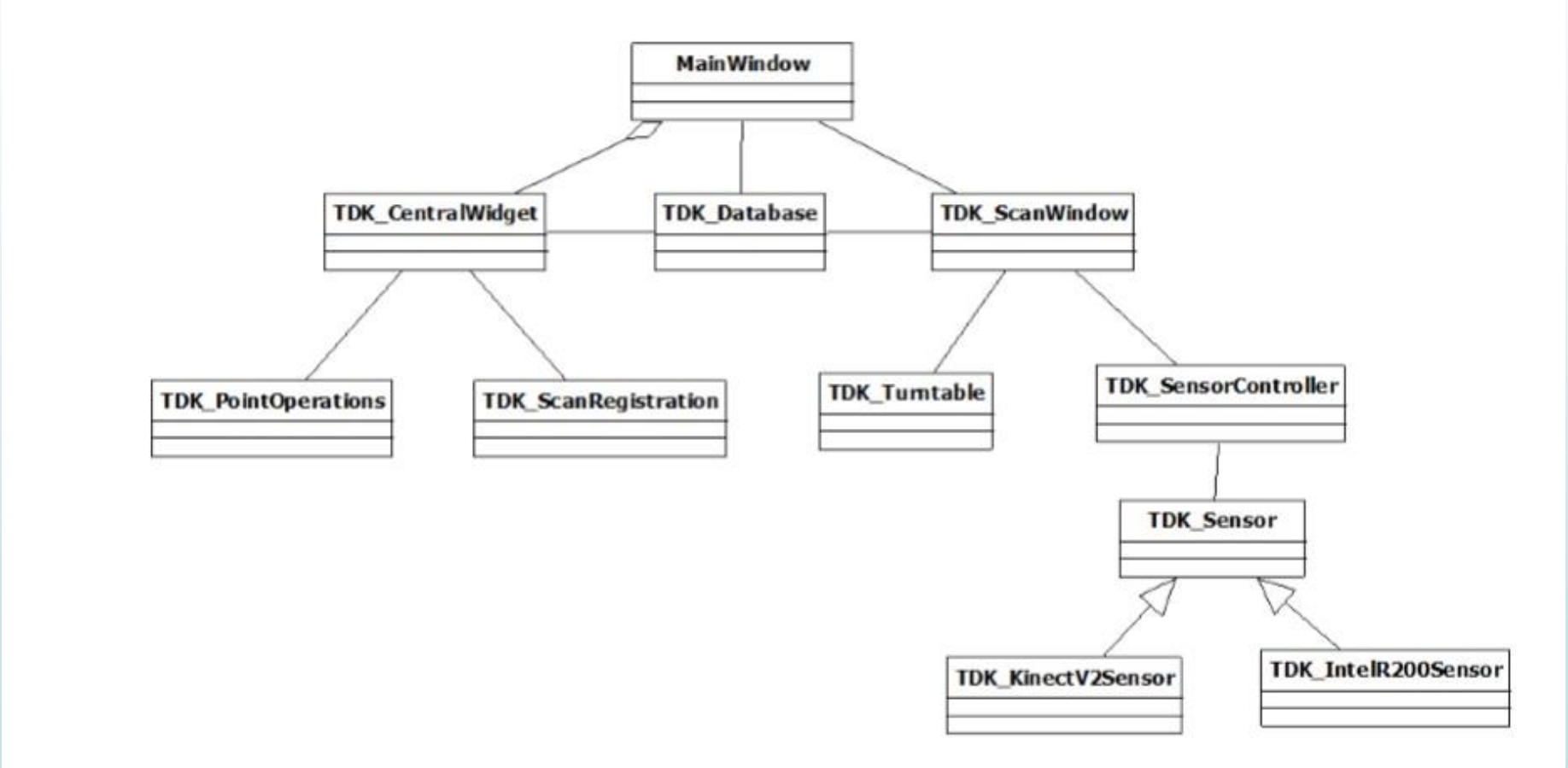


Interface

- Displaying



Class diagram



Comments

- Uncommented code

```
void TDK_Database::mf_StaticAddPointCloud(pcl::PointCloud<pcl::PointXYZRGB>::Ptr pointCloudPtr, QString pointCloudName)
{

    QString name;
    qDebug() << "Trying to add point cloud";
    mv_PointCloudsVector.push_back(pointCloudPtr);
    qDebug() << "Point cloud set";
    if("U1425_AUTOGENERATE" == pointCloudName){
        mv_NumberOfAutogeneratedPointClouds++;
        name = QString("TDK_CapturedPointCloud").append(QString::number(mv_NumberOfAutogeneratedPointClouds));

        mv_PointCloudsName.push_back(name);
        qDebug() << "Point cloud name set default " << QString("TDK_CapturedPointCloud").append(
                                                    QString::number(mv_NumberOfAutogeneratedPointClouds));
    }
    else{
        name = pointCloudName;
        mv_PointCloudsName.push_back( pointCloudName );
        qDebug() << "Point cloud name set " << pointCloudName;
    }
}
```

Comments

- Same code but commented

```
void TDK_Database::mf_StaticAddPointCloud(pcl::PointCloud<pcl::PointXYZRGB>::Ptr pointCloudPtr, QString pointCloudName)
{   //This function will add a point to the pointcloud


    QString name;                                   //name for the new point
    qDebug() << "Trying to add point cloud";       //Sending a message to the debugger
    mv_PointCloudsVector.push_back(pointCloudPtr);  //We add the pointer to the vector
    qDebug() << "Point cloud set";                 //new message
    if("U1425_AUTOGENERATE" == pointCloudName){ //if everything is fine
        mv_NumberOfAutogeneratedPointClouds++;  //we increase our static variable
        name = QString("TDK_CapturedPointCloud").append(QString::number(mv_NumberOfAutogeneratedPointClouds));
                                                //can create the name of the point using the static variable
        mv_PointCloudsName.push_back(name);     //we add the name to the data base
        qDebug() << "Point cloud name set default " << QString("TDK_CapturedPointCloud").append(
                                                QString::number(mv_NumberOfAutogeneratedPointClouds));
    }
    else{
        name = pointCloudName;  //we set the name of the point
        mv_PointCloudsName.push_back( pointCloudName ); //we suppress the name from the database
        qDebug() << "Point cloud name set " << pointCloudName; //we send a message
    }
}
```

Conclusion

- Issues
- What we have learned?
- To go further

Any questions?