The 3DRi Software Development Kit (SDK) is a library of proprietary software algorithms that extract actionable information from OPAL scanners in real-time.

The 3DRi algorithms sift through the millions upon millions of raw 3D data points generated by the LiDAR scanner and convey only the critical information needed for real-time operations of autonomous systems. This eliminates the need for painful post-processing on a back-office system as with conventional LiDAR systems.

Applications Include:
- Automatic Change Detection
- Obscurant filtering
- Object Segmentation
- Object Identification
- Object Tracking

3DRi™ System Manager /API

The framework for collecting and managing 3D data from OPAL LiDAR scanners; based on an open “publish-subscribe” architecture where the various 3DRi components communicate with each other through a lightweight Ethernet-based data distribution service. This allows for rapid application development and facilitates scaling applications from one computer to a series of networked computers.

3DRi™ Viewer

An intuitive graphical user interface (GUI) used to configure and operate OPAL scanners and to manage the installed plug-in components. Scan data may be viewed live or as a logged data file for 3D point cloud visualization, data manipulation, range / elevation colourization, and basic size measurements of features in the data.
3DRi™ Core Plug-in Components

REGISTER – Registers 3D point clouds to external navigation data in real-time (GPS & IMU).
SEGMENT – Segments registered OPAL 3D data into ground and above-ground data in real-time.
OBSCURANTS – Enables enhanced obscurant-penetration and filtering functions in harsh environments.

3DRi™ Advanced Plug-in Components

A suite of advanced, feature-rich plug-ins used by OEMs and system integrators to develop intelligent real-time applications.

MODEL - Manages 3D data from multiple OPAL scanners in a single coherent database.
ALIGN - Automatically aligns 3D data using object features in multiple fields-of-view in real-time.
OBJECTS - Segments and classifies above-ground objects as stationary or moving, or by size.
DETECT - Automatically detects changes in the 3D data in real-time.
IDENTIFY - Recognizes objects using a database of known objects to provide ID, type, and confidence factor.
TRACK - Tracks objects in real-time and outputs object ID, 6DOF position, speed and heading.

Easy integration with OPAL™ LiDAR

Neptec Technologies can assist in the development of applications and solutions using the 3DRi framework and algorithms.

For more information please contact NTCSales@neptec.com or visit our website.