

MARINE SCENARIO - WAVE FRONT DETECTION

Touria Bajjouk

iFremer, France

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USER EXPECTATIONS

- Airborne Lidar is a widely adopted technology for shallow coastal waters applications,
- Contains much more information (useful for end-users) than simple bathymetry,
- There is no commercial tool to handle this complex data.

IQMULUS USER STORIES: 39 TO 43

Production of a **seafloor 2D map** with labels corresponding to identified sea bottom types
Using Bathymetric Lidar Full WaveForm Data

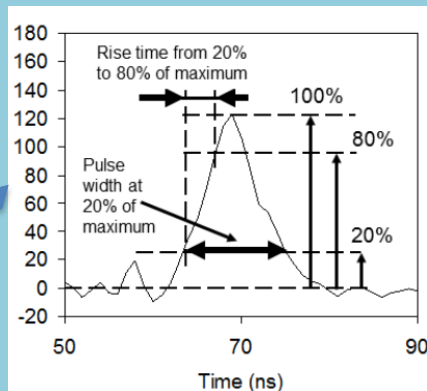
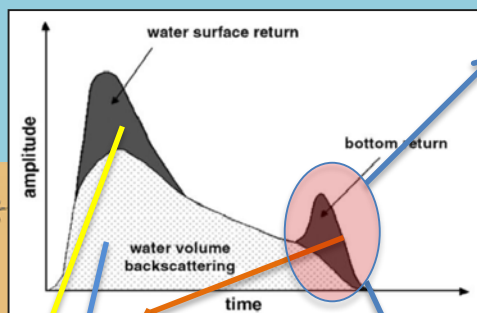
SERVICE 111 – BWF1_WF_INDEXING

Performs both sequential and spatial indexing

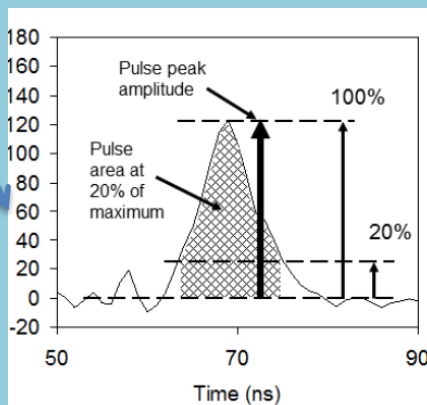
SERVICE 112 - BWF2_WF_ATTRIBUTE_EXTRACTION

Allows to o extract from the lidar waveform parameters (Peak height, Pulse width, Pulse area, ...) useful for classification of Seabed bottom types.

(Octave)



28 Waveform Attributes



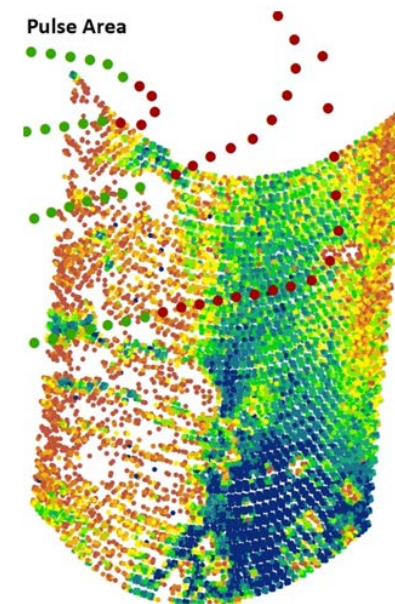
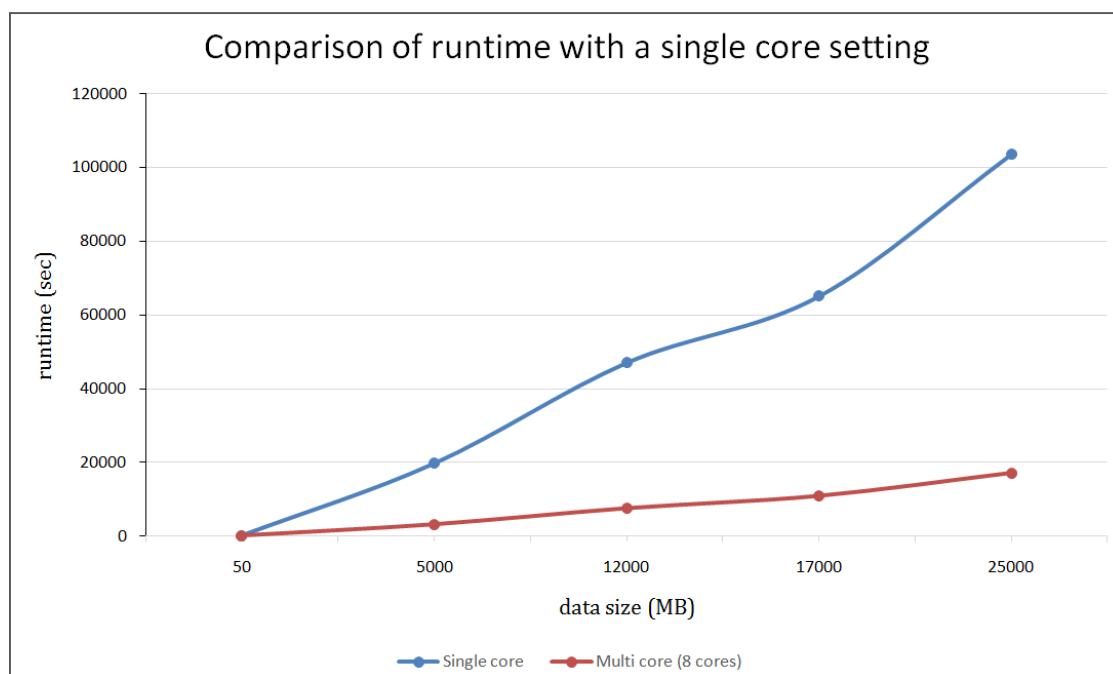
Classification

Hard Substrate

Soft Substrate

Vegetation

- Tested on several small and larger scale survey data sets from the Hawk Eye II system
- Compared to ground truth data (video and diving samples) on sea bottom types



Field data showing the presence (green) and absence (brown) of vegetation overlaid on Pulse Area