Package: Provider DVL

Global Architecture

Configurations

Topics ROS

/provider_dvl/pd0_packet

The 'pd0_packet topics contains all the informations of the DVL. It is being sent from the DVL at every signals.

The specifications of the PD0 packets can be found on the Teledyne Documentation (c.f. Github). It is composed of the other messages of the DVL and does not contain any raw data. The specifications for all the other messages can also be found on the documentation.

```
# sonia_msgs/PD0Packet
std_msgs/Header header
  uint32 seq
  time stamp
  string frame_id
sonia_msgs/DeviceInfo device_info
  std_msgs/Header header
    uint32 seq
    time stamp
    string frame_id
  uint8 fw_version
  uint8 fw_revision
  uint64 cpu_board_serno
  uint16 system_configuration
  uint8 beam_count
  sonia_msgs/Sensors available_sensors
```

```
    std_msgs/Header header
      uint32 seq
      time stamp
      string frame_id
    bool calculates_speed_of_sound
    bool depth
    bool yaw
    bool pitch
    bool roll
    bool salinity
    bool temperature
sonia_msgs/AcquisitionConfiguration acquisition_conf
  std_msgs/Header header
    uint32 seq
    time stamp
    string frame_id
  sonia_msgs/Sensors used_sensors
    std_msgs/Header header
      uint32 seq
      time stamp
      string frame_id
    bool calculates_speed_of_sound
    bool depth
    bool yaw
    bool pitch
    bool roll
    bool salinity
    bool temperature
  uint8 lag_duration
  uint8 cell_count
  uint8 profiling_mode
  uint8 low_correlation_threshold
  uint8 code_repetition_count
  uint16 pings_per_ensemble
  float32 cell_length
  float32 blank_after_transmit_distance
  float32 water_layer_min_ping_threshold
  float32 water_layer_velocity_threshold
  uint64 time_between_ping_groups
  float32 yaw_alignment
```

```
  float32 yaw_bias
  float32 first_cell_distance
  float32 transmit_pulse_length
  uint8 water_layer_start
  uint8 water_layer_end
  uint8 false_target_threshold
  bool low_latency_trigger
  float32 transmit_lag_distance
  bool narrow_bandwidth_mode
  uint8 base_frequency_index
sonia_msgs/OutputConfiguration output_conf
  uint8 BEAM=0
  uint8 INSTRUMENT=1
  uint8 SHIP=2
  uint8 EARTH=3
  std_msgs/Header header
    uint32 seq
    time stamp
    string frame_id
  uint8 coordinate_system
  bool use_attitude
  bool use_3beam_solution
  bool use_bin_mapping
sonia_msgs/Status status
  std_msgs/Header header
    uint32 seq
    time stamp
    string frame_id
  uint32 seq
  uint64 time
  geometry_msgs/Quaternion orientation
    float64 x
    float64 y
    float64 z
    float64 w
  geometry_msgs/Vector3 stddev_orientation
    float64 x
    float64 y
    float64 z
  float32 depth
```

```
  float32 speed_of_sound
  float32 salinity
  float32 temperature
  float32 pressure
  float32 pressure_variance
  uint8[8] adc_channels
  uint64 min_preping_wait
  uint16 self_test_result
  uint32 status_word
sonia_msgs/CellReadings cell_readings
  std_msgs/Header header
    uint32 seq
    time stamp
    string frame_id
  uint64 time
  sonia_msgs/CellReading[] readings
    std_msgs/Header header
      uint32 seq
      time stamp
      string frame_id
    float32[4] velocity
    float32[4] correlation
    float32[4] intensity
    float32[4] quality
sonia_msgs/BottomTrackingConfiguration bottom_tracking_conf
  std_msgs/Header header
    uint32 seq
    time stamp
    string frame_id
  uint16 ping_per_ensemble
  uint16 delay_before_reacquiring
  float32 correlation_threshold
  float32 evaluation_threshold
  float32 good_ping_threshold
  uint8 mode
  float32 max_velocity_error
  float32 max_tracking_depth
  uint8 gain
sonia_msgs/BottomTracking bottom_tracking
  std_msgs/Header header
```

```
    uint32 seq
    time stamp
    string frame_id
  float64 time
  float64[4] range
  float64[4] velocity
  float64[4] correlation
  float64[4] evaluation
  float64[4] good_ping_ratio
  float64[4] rssi
```

/provider_dvl/acquisition_conf

???

```
# sonia_msgs/AcquisitionConfiguration
std_msgs/Header header
  uint32 seq
  time stamp
  string frame_id
sonia_msgs/Sensors used_sensors
  std_msgs/Header header
    uint32 seq
    time stamp
    string frame_id
  bool calculates_speed_of_sound
  bool depth
  bool yaw
  bool pitch
  bool roll
  bool salinity
  bool temperature
uint8 lag_duration
uint8 cell_count
uint8 profiling_mode
uint8 low_correlation_threshold
uint8 code_repetition_count
uint16 pings_per_ensemble
float32 cell_length
float32 blank_after_transmit_distance
float32 water_layer_min_ping_threshold
```

```
float32 water_layer_velocity_threshold
uint64 time_between_ping_groups
float32 yaw_alignment
float32 yaw_bias
float32 first_cell_distance
float32 transmit_pulse_length
uint8 water_layer_start
uint8 water_layer_end
uint8 false_target_threshold
bool low_latency_trigger
float32 transmit_lag_distance
bool narrow_bandwidth_mode
uint8 base_frequency_index
```

/provider_dvl/output_conf

???

```
# sonia_msgs/OutputConfiguration
uint8 BEAM=0
uint8 INSTRUMENT=1
uint8 SHIP=2
uint8 EARTH=3
std_msgs/Header header
  uint32 seq
  time stamp
  string frame_id
uint8 coordinate_system
bool use_attitude
bool use_3beam_solution
bool use_bin_mapping
```

/provider_dvl/status

???

/provider_dvl/cell_readings

???

/provider_dvl/bottom_tracking_conf

???

/provider_dvl/bottom_tracking

???

/provider_dvl/twist

???