TORDIS SSBI
Acoustic Condition Monitoring

Trond Bertmand
Leading Advisor Subsea Production Control System
Remote Condition Monitoring by use of Acoustic and Electrical field sensors
Tordis IOR Monitoring Module

- 6 x Underwater Electromagnetic Field Sensor
- 17 x Acoustic Sensor
Concept – Remote Sensing

- No Cabling to monitored objects
- No structure mounting of sensors
- Large area and numerous objects monitored with an array of centrally positioned sensors
- No direct interface to monitored object
- Monitoring system can be replaced without intervention on monitored objects
Tordis Multiphase Pump, Measurements
Mechanical imbalance and errors

- Different types of errors, appears at known bands of frequency orders for groups of equipment;
Supplier independent CM
CM can be more than single point measurements

- Sequence of events during pump shut in
Summary monitoring experience

- Topside Server Software is ‘prototype’ delivered by Naxys
- Lacking read only access
- HMI on new systems is important to ensure utilisation
- As long pumps operate as expected, operators do not interfere (or learn)
  - Operation related information is available elsewhere
  - Current status: not in use
  - More focus on Naxys expected in 2012 when replacing pipelines and rerouting production from field
- Regarded as valuable supplement to basic pump/motor monitoring, especially with respect to fault finding and potentially preventive maintenance
- High speed communication interface is an absolute requirement
Thank you