By selecting from our standard MIPEG modules we can engineer the following typical solutions as a combined or as a stand-alone system:

**MIPEG 2000 Safe Load Indicator - SLI/RCI/LML**
The system conforms to all World Wide offshore installation rule requirements. Outputs are available for interfacing with crane controls and logic, both as analogue signals or as potential free contacts. The system can include data monitoring to enable evaluation of crane operational activities. Monitoring can also assist in incident and accident evaluation.

**Mipeg Rope Speed and Direction Indicator - RSI**
The system monitors the movement of the hook/load in both directions for speed and position using sensors reading the rotation of the winch. It can also be enhanced by taking boom raising or lowering into the equation. It is used for anti-two block and last wraps on the drum signals. It also gives hook/load position vertically giving assistance when making blind lifts.

**Mipeg Ton/Miles**
By combining the Mipeg 2000 Recording and RSI systems, a calculation can be provided for all ropes on the crane. These Ton/Mile figures will allow closer monitoring of ropes with regard to travel and loads carried. It is particularly useful when investigating premature wear, early failure or replacement periods for the ropes.

**MIPEG Gross Overload Protection System - GOPS**
By combining the Mipeg 2000 and RSI systems GOP trip signals can be provided based upon the load carried by the crane hook at a particular radius and the hook position relative to its height above sea level. This will increase the safety of the crane operation and minimise the risk of false triggering.

**Mipeg Slew Operation Limit Monitor - OLM**
The OLM monitors the hook/boom position on the platform deck to avoid entry into hazardous areas. By using a combination of both boom angle and crane rotation about its axis, areas on the platform can be avoided by either alarming the operator or providing additional output signals. Connected to other cranes on the same installation, a simple anti collision system can also be provided.

All parts are designed and produced according to ISO 9000
The MIPEG modules are 3rd party approved and comply with the ATEX requirements set for equipment used in hazardous areas. The modules are available in safe area, zone 1 (Class 1. Div. 1) or zone 2 (Class 1. Div 2).

MIPEG 2000 is the fourth generation of equipment supplied since 1978, and is used by more than 120 operators with more than 2200 systems installed up to the end of 2012.

For more information, please check www.mipeg.com

Sales & Service in NORWAY, UK, USA, SINGAPORE, UAE, AUSTRALIA, TRINIDAD & BRAZIL

Aanderaa reserves the right to modify design of this equipment without previous notice.
The MIPEG Modules

MIPEG is modular in design and can operate either as a simple electronic crane load indicator or as a monitoring and recording system. With 50 years experience our engineering resources together with your input can produce a system to suit your individual requirements.

1. The MIPEG Rope Speed Sensor
   - is an absolute shaft encoder which will keep track of the amount of rope in use and hook position at all times. The sensor is not affected by power loss. Practically unlimited resolution both within one revolution and multiple revolutions. Installed on the winch shaft or other revolving parts.

2. The MIPEG Operator's Display
   - is designed for ease of viewing using both analogue and digital display techniques with a focus on "the corner of the eye" features achieved using the large analogue pointer and green/yellow/red colours and lights.

3. The MIPEG Slew Angle Position Sensor
   - is an absolute shaft encoder which will keep track of the slew position at all times and will not be affected by power loss. Practically unlimited resolution both within one revolution and multiple revolutions. Installed in the slew system on both ball bearing and king post cranes.

4. The MIPEG Load Hoist & Moment Sensor
   - using our own unique vibrating S-Sensor wire technology. No electronics required at the sensor point, achieving high temperature resistance and excellent noise immunity to electro-magnetic sources as radios, radars and other wireless equipment. Various different designs have been developed to cover all crane configurations (tension links, load pins, instrumented sheaves) which have been used in offshore applications for more than 30 years.

5. The MIPEG Boom Angle Sensor
   - is a solid state, gravity based boom angle sensor. The unit is easily installed on the crane measuring the boom inclination and can provide boom angle pre-warming and final alarm settings to avoid boom damage.

The MIPEG Computer Cabinet
- contains all required interface circuits to the Mipeg displays, sensors and crane control input/output. The system can contain a "crane usage recorder" which stores data for each individual lift such as dynamic and static hook load, operating radius and other operational data as requested.

The MIPEG Auxiliary Display
- is designed for high flexibility in presenting text, alpha numeric signs and bar-graphs. This display is used both as the Rope Speed Indicator Display as well as the Operation Limit Monitor and the Annunciator Display.

The MIPEG Boom Angle Sensor
- is a solid state, gravity based boom angle sensor. The unit is easily installed on the crane measuring the boom inclination and can provide boom angle pre-warming and final alarm settings to avoid boom damage.