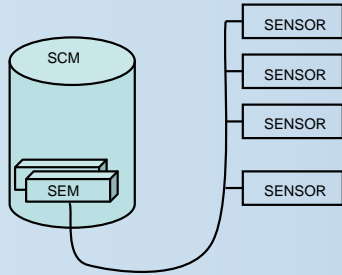




# Subsea Instrumentation Interface Standardisation

## About SIIS

Following the success of the IWIS JIP in developing a standard interface for intelligent wells, the SIIS aim is to develop a standard interface between the subsea control module and subsea sensors. The SIIS concept originated in BP and Shell in 2003. Since then the SIIS group has continued to grow in numbers led by key industry players in the subsea controls area.



SIIS has developed a tri-level classification system for control system to sensor interfaces:

- Level 1 – Simple instrument loops (4-20 mA)**
- Level 2 – CANbus (Fault tolerant) CANOPEN**
- Level 3 – Ethernet TCP/IP**

Level 2 in this classification describes relatively complex sensors which have serial digital connections to the control system, either in star or ring-main connection styles. It can also include downloadable characteristics and, most importantly, is described as having 'Open Standard' characteristics.

SIIS investigated ways to implement an existing protocol standard for 'Open Standard' instrumentation interfaces. Using the JIP group as a collaborative resource to the industry, it facilitated information exchange in furthering the development of the vision.

## Vision

The ultimate vision, which has utility for both the end user operator and for the first tier subsea control system supplier, is one in which 'subsea mateable' interfaces are available from subsea control systems which do not have to be pre-defined in terms of the instrumentation to which they will subsequently be attached.



## Open Standard

Fundamental work of the SIIS group identified a suitable protocol that has been taken forward as the basis for standardisation in the drive towards an 'Open Standard' capability. From ten industry protocols considered, SIIS strived to be scrupulously fair, reducing this to a shortlist of three by taking account of cost comparisons and levels of support across industry in arriving at the final selection which resulted in:

**The CANOPEN interface type selected as the standard SIIS protocol.**

## Membership

The work of SIIS is on going in establishing the details for the standard in areas of the application layer, redundancy, fault-tolerant topology issues and connector pinout and mechanical interfaces.

SIIS is open to all oil companies, subsea control system suppliers and subsea sensor vendors. It now has a membership that has grown to nearly 30 organisations that meet regularly in Europe and the USA. To find out more visit our website [www.sis-jip.com](http://www.sis-jip.com).

## SIIS Statement

"CANOPEN (fault tolerant – ISO 11898-3) has been selected as the standard for the SIIS protocol. It aims to capture at least 90% of SIIS Level 2 sensors – with the remainder being addressed by IWIS, TCP/IP or alternative protocols."

