

# Case Study

**Client:** Amec / ConocoPhillips  
**Facility:** Britannia Production Platform  
**Location:** North Sea  
**Scope:** Britannia Satellites  
Metering System



## Overview

ConocoPhillips and ChevronTexaco own the Britannia production platform. They manage the facility with a jointly owned company Britannia Operator Limited. This joint venture is highly successful and as the Britannia production rates declined, plans were set in place to extend the life of the facility by developing satellite fields.



## Location

These fields, Brodgar and Callanish, are located 69km and 43km respectively from the Britannia platform and these two fields were included in Britannia Satellites Development Project (Phase 1).

A major part of the development project was the design and construction of a new Bridge-Linked Platform (BLP), beside the Britannia platform, which would hold the reception and production for the satellite fields. The BLP process facilities include individual production trains for Brodgar and Callanish for the first stages of separation.

After this the products are transferred to the main Britannia facilities and combined with Britannia production. After final processing the SAGE (gas) and Forties (oil) pipelines export the commingled products.

The Metering Computer System interfaced to an array of flowmeters associated with Brodgar, Callanish and Britannia

Production, and provide measurements for allocation of the commingled exported product.



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## The System

The Metering Computer System interfaced to an array of flowmeters associated with Brodgar, Callanish and Britannia production and provided the necessary measurements for allocation the quantities of the commingled exported product to each field.

The system comprises:

- Two Emerson S600 flow computers for the Brodgar separator (on BLP platform)
- Two Emerson S600 flow computers for the Callanish separator (on BLP platform)
- Two Emerson S600 flow computers for the Britannia separator (on Britannia platform)
- Two Emerson S600 flow computers for the Brodgar and Callanish Auxiliary streams (on BLP platform)
- Two SGC Meteor Metering Supervisory Computers operating in duty/stand-by mode (on BLP platform)
- One Meteor Remote Operator Terminal (on Britannia platform).

In all instances dual flowcomputers were provided, operating in duty/cold stand-by mode. All flowcomputers were configured for multi-stream application.

The flowcomputer dedicated to separators provided a calculations associated with;

- USM meter for produced condensate/oil streams; with fast loop and liquid sampling
- V-cone DP meters for wet gas streams
- USM meter for water streams

The flowcomputer associated with the auxiliary metering provided a calculations associated with:

- USM meter for Callanish gas lift stream
- USM meter for Callanish recycled oil stream
- USM meter for Brodgar recycled condensate
- Coriolis meter for Brodgar water to Caisson and Brodgar water to Degasser
- USM meter for Brodgar water / MEG stream.



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