

### Introduction

KELTON® recognises the value of auditing the various stages of development, design, installation, commissioning and operation of measurement and allocation systems. Identifying present and potential problems is crucial, in many cases saving costs and will encompass the following:

### Pre-Design

This is probably the most critical stage in the life of a measurement and allocation system as here the system definition is established. A KELTON® audit ensures the system proposed is practical and cost effective while meeting statutory and operator requirements.

### Design

At this stage a KELTON® audit will encompass a review of the design documentation including:

- System and functional design specification
- Witness test specification
- Process and instrumentation diagrams
- Layout and installation drawings and specification

### Pre-Commissioning

Following the installation of the system and set up of the instrumentation a KELTON® audit will ensure that:

- The installation will not jeopardise the system requirements and is in accordance with the approved drawings and specifications
- The instruments are functional and have valid calibration certificates
- The various flow computers are configured correctly
- The relevant operating, calibration and maintenance procedures are available and are suitable and the system is ready for commissioning

### Post-Commissioning

Ideally this audit would be carried out within three months of commissioning and would ensure that:

- Operational problems are identified
- The operator understands the system
- Calibration activities are appropriate
- The technicians understand the system
- Suitability of the procedures with operational experience

### Compliance

This audit covers the routine requirement to ensure that the system operation, calibration and maintenance is in compliance with:

- Statutory
- Pipeline operator
- Operator

### Management

### About KELTON®

KELTON® is an independent and accredited company specialising in flow measurement consultancy, auditing, training and the provision of specialist software. Founded in 1991, the company employs more than 50 people with 30 consultants who have over 500 man years of experience in the management, operation and maintenance of flow measurement systems. KELTON® has an outstanding reputation in the industry. Services include:

- Audit and Certification
- Uncertainty Calculations & Models
- Measurement Training
- Engineering Studies
- Metering System Documentation & Support
- Software Applications

Currently service is provided worldwide for; major oil & gas operating companies, gas transmission & distribution companies, LNG terminal operators and system integrators. Presently, service is offered from three strategic locations: UK, Qatar and Abu Dhabi.

If additional information is required on KELTON® flow consultancy services or software applications visit:

[www.kelton.co.uk](http://www.kelton.co.uk)



The management audit will include the downstream areas that can affect the system:

- Does the site management appreciate the importance and understand the need for measurement and allocation?
- Is the data being handled efficiently and correctly?
- Does the accounting system meet requirements?

### Allocation

In many cases the production is being allocated from a number of measurement points and the dependence of each measurement is critical to the overall allocation. An audit which would encompass all the various inputs identifies:

- The criticality of each input to the overall allocation
- Any bias that may be present
- The suitability of the allocation procedure

### Certification

After an audit KELTON® can issue a compliance certificate in line with ISO/IEC 17020: 2012 Conformity Assessment – Requirements for the operation of various types of bodies performing inspection guidelines, as issued by the United Kingdom Accreditation Service (UKAS).

