



Oil and Gas Measurement and Allocation Technical Consulting Services

Performance assurance that protects value, ensures compliance, and enables production optimization



CONNECTION
ANALYSIS
DATA
SEARCHING
VERIFICATION
CODING
SENDING



From wellhead to processing facilities and further into midstream operations, Wood's experienced team is capable of supporting oil and gas operators worldwide to achieve optimum performance from their measurement system, both onshore and offshore.

Wood's Measurement and Allocation Consulting Services provides assurance to operators that commercial and regulatory critical measurement systems are designed, operated, and maintained properly. Our operator support includes fiscal and custody transfer, fiscal allocation, and non-fiscal allocation measurement systems. The team addresses metering and analysers, process systems, and input and output data integrity.

Key Support Scenarios

- Measurement and allocation system assurance
- Multiphase meter sustainability in operations
- Capital projects measurement engineering

All upstream operators deal with measurement and allocation of produced oil and gas. Wood's team has production measurement subject

matter experts (SME) backed by a full staff of discipline engineers to address a variety of measurement-related areas including, but not limited to phase behavior modelling, process engineering, flow assurance, CFD dynamic process simulation and process modifications & optimization.

Measurement Expertise

- Metering and analysers
- Sampling and laboratory analysis
- Flow calculations
- Phase behaviour and PVT applications
- Multiphase and wet gas metering
- Well test design and validation
- Uncertainty analysis
- Equipment testing and qualification
- Industry standards: API, AGA, GPA, ASTM, ISO, and EI
- Commercial support for production agreements and regulatory permits

Wood's team has a wealth of knowledge, backed by years of experience in developing production allocation systems with pre-defined contingency procedures for a variety of abnormal operating modes.

Allocation Expertise

- Fit-for-purpose allocation system design including proportional, uncertainty-based, continuous/periodic mixed systems, by difference, and contingent allocation
- Independent input data analysis and assurance
- Allocation disputes investigation and reporting
- Process simulation modelling



1. Alarms, faults and eq. validation

2. Signal trending and statistics

3. Phase behavior / PVT validation

4. Operational event comparative analysis

5. Gas, oil, water material balance



Multiphase Meter Operations Support

Wood's multiphase metering team provides full life cycle support from start-up to ongoing performance verification. Wood also deploys Virtuoso® systems that provides an integrated platform for data handling, with surveillance and condition monitoring to HMI presentation or dashboarding.

Areas include:

- Meter PVT configuration
- Fluid property surveillance
- Real-time meter output uncertainty
- LOPA-based performance gap detection – condition monitoring
- Traffic light meter health indicator and meter output reliability
- Operation by exception
- Integrated HMI via the Virtuoso® server linked to the client's network
- Field-proven inferential metering technology – Virtual Metering System®

Measurement Engineering in Projects

Wood's measurement engineering support in projects is to provide technical support during key points in the project life cycle.

- Engagements between project engineers and Wood SMEs at key project points
- Concept development – commercial, regulatory and technical hurdles
- FEED – philosophy documents, functional requirements
- EXECUTE – detailed design, handover documents, start-up and commissioning, and training

Measurement Assurance Program (MAP)

Wood can provide a comprehensive measurement assurance program including:

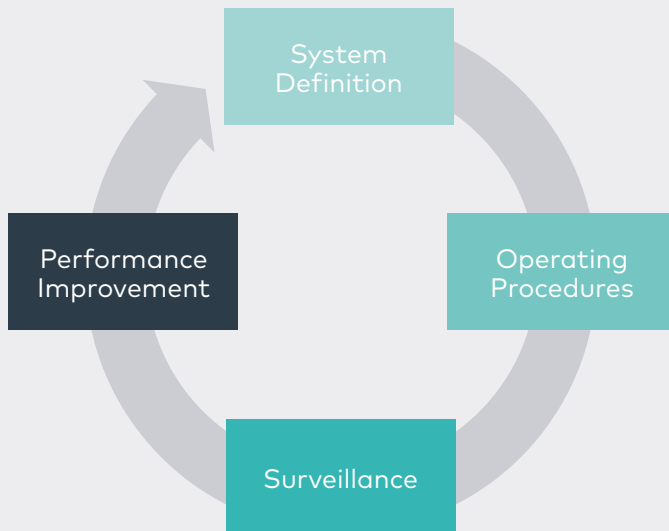
- Documentation of entire measurement system
- Operating procedures
- Development of performance monitoring and surveillance system
- Performance improvement processes



- High level report on commercial, regulatory, and technical challenges
- Establishes the priority for measurement system design

- Measurement and allocation philosophy (workshop)
- Initial design review
- Final design review
- Measurement system supplier bid review support

- Construction inspection and qualifications
- Factory acceptance test
- Site acceptance test
- Commissioning and start-up
- Measurement system documentation (Measurement Manual)
- Measurement system training





Wood is a global leader in the delivery of project, engineering and technical services to energy and industrial markets. We operate in more than 60 countries, employing around 55,000 people, with revenues of around \$10 billion. We provide performance-driven solutions throughout the asset life-cycle, from concept to decommissioning across a broad range of industrial markets including the upstream, midstream and downstream oil & gas, chemicals, environment and infrastructure, power & process, clean energy, mining and general industrial sectors. We strive to be the best technical services company to work with, work for and invest in.

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