

Liutaio provides independent engineering expertise that helps industrial organizations understand plant behavior, reduce technical uncertainty, and make better engineering decisions

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Introduction

Industrial plants rarely operate exactly as their design documentation would suggest. Although production objectives are often achieved, operating teams frequently adapt to hidden process interactions, control limitations, equipment behaviour, and practical operating constraints that gradually influence plant performance.

These situations are not always caused by equipment deficiencies or obvious engineering problems. More often, they arise from the dynamic behaviour of complex operating systems, making them difficult to recognize through conventional engineering reviews.

Understanding these situations frequently requires an independent engineering perspective before corrective actions, major investments, or implementation decisions are undertaken.

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Typical Engineering Situations

Independent engineering support is typically required in one of three situations.

Understanding Before Acting

The organization recognizes that operational improvement opportunities may exist but has not yet established the engineering mechanisms responsible for the observed behaviour.

Objective engineering understanding is developed before corrective actions are selected.

Solving a Known Engineering Problem

The engineering problem has already been identified.

The objective is to apply specialist technical expertise to analyse the problem, implement appropriate engineering solutions, and verify successful operation.

Independent Technical Perspective

The organization has identified both the engineering problem and a proposed solution but wishes to obtain an independent technical review before committing significant resources or making an important engineering decision.

Engineering Philosophy

Engineering recommendations should follow objective technical evidence rather than predetermined solutions. Independent engineering judgement, practical industrial experience, and technically defensible conclusions form the basis of every engineering recommendation, helping organizations reduce technical uncertainty and make better engineering decisions.

Technical Expertise

Liutaio's engineering experience spans more than three decades across Oil & Gas, Refinery, Petrochemical, Mining, Pulp and Paper, Gas Plants, Power Generation, pharmaceutical and other process industries.

Technical expertise includes:

- Process Control and Industrial Automation
- Advanced Process Control (APC)
- Functional Safety (IEC 61508 / IEC 61511, SIS, SIF, IPF, SRS)
- Instrumentation Systems
- Control System Architecture
- Commissioning and Start-up
- Operational Performance Improvement
- Dynamic Process Behaviour Analysis
- Independent Technical Reviews

This experience has been developed through participation in engineering studies, FEED, detailed engineering, construction, commissioning, start-up, and operating facilities.

Professional Background

Claudio Passarella is a Chemical Engineer with a Master of Science in Chemical Engineering specializing in Automation, Instrumentation, Optimization, and Process Control.

Over more than three decades, Claudio Passarella has worked as project engineer, consultant, technical specialist, engineering manager, and independent advisor across international industrial projects covering the complete project lifecycle, from conceptual studies through plant operation.

Starting a Technical Discussion

Meaningful engineering discussions rarely begin by selecting a predefined service.

They begin by understanding the engineering situation, the technical objectives, and the decisions that must ultimately be supported.

Initial discussions typically explore:

- the current engineering situation;
- operational objectives;
- available technical information;
- remaining engineering uncertainties;
- the decisions requiring technical support.

Once these aspects are understood, the most appropriate engineering approach can be discussed with clarity and confidence. This approach is consistent with Liutaio's communication philosophy of establishing technical understanding before commercial discussions.

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Initial technical discussions are typically conducted remotely to understand the engineering situation, discuss the technical objectives, and determine the most appropriate engineering path.