

A background image of an industrial plant with various towers, pipes, and structural elements, overlaid with a semi-transparent dark grey filter.

# Improving SIS Auditability and Traceability (Through Digitization)

Pieter Poldervaart, December 17<sup>th</sup> 2025

CENOSCO

# Our Solutions

Unifying Integrity Management Solutions.

Explore a wide range of products to cover all your equipment types and processes.

IMS PEI

Pressure  
Equipment Integrity



IMS RCM

Reliability Centered  
Maintenance



IMS FCM

Flange Connection  
Management



IMS PLSS

Pipeline & Subsea  
Systems



IMS SIS

Safety Instrumented  
Systems



IMS Civil

Integrity Management  
for Civil Equipment



IMS TAT

Turnaround  
Technologist



IMS FMA

Fabric Maintenance



Hydrocor\*

Internal Corrosion  
Prediction



(\* Standalone Software)



20 years  
partnership

30<sup>+</sup>  
years

Industry  
Expertise



Interfaces with  
CMMS, ERPs, etc.



Short Time to  
Value



Extensive  
Libraries



Works on all  
Mobile Devices



Proprietary  
Methodologies



Outstanding user  
experience  
(based on user feedback)

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# Agenda

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1

SIS Auditability and Traceability: Background

2

FS Management in Projects. A real-world example

3

Simplify through Digitization: Single Software, Single source of truth

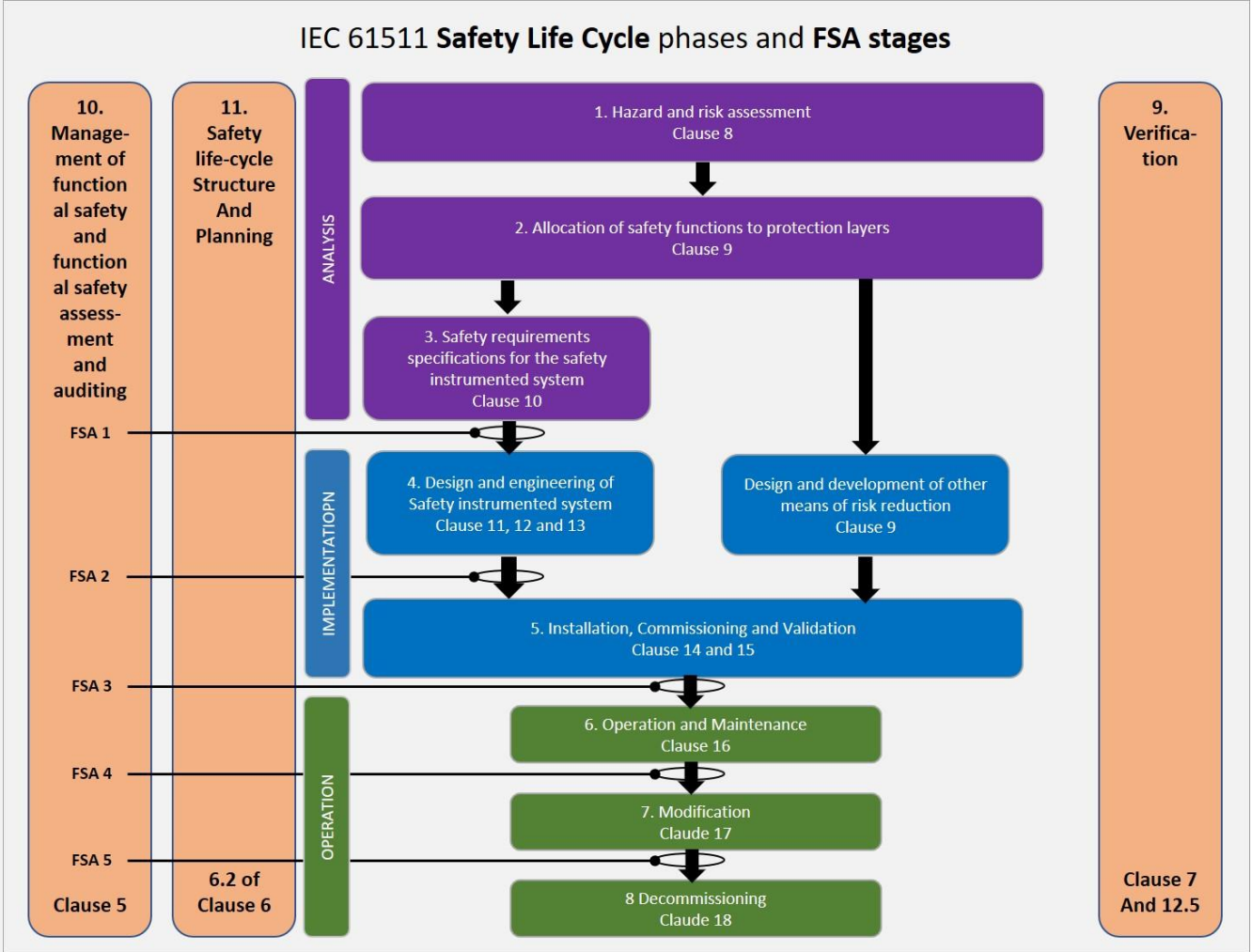
4

Summary and Q&A



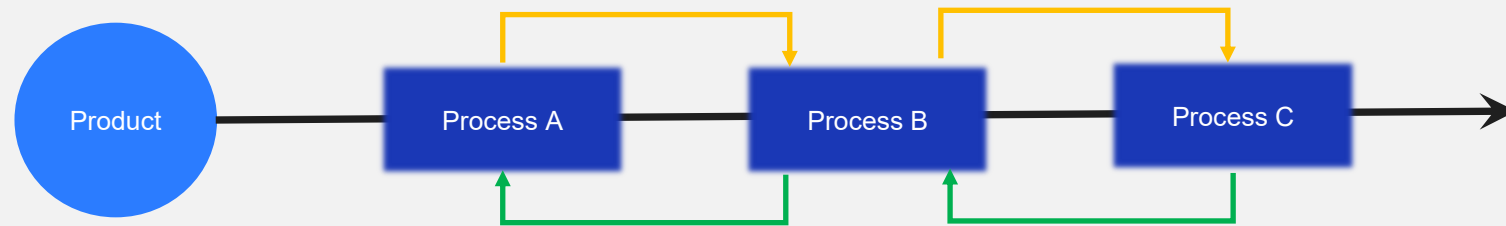
# **SIS Auditability and Traceability: Background**

## SIS Auditability and Traceability: The SIS Lifecycle

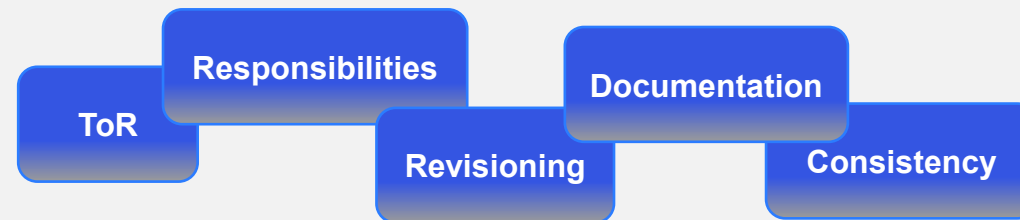


# What are Auditability and Traceability?

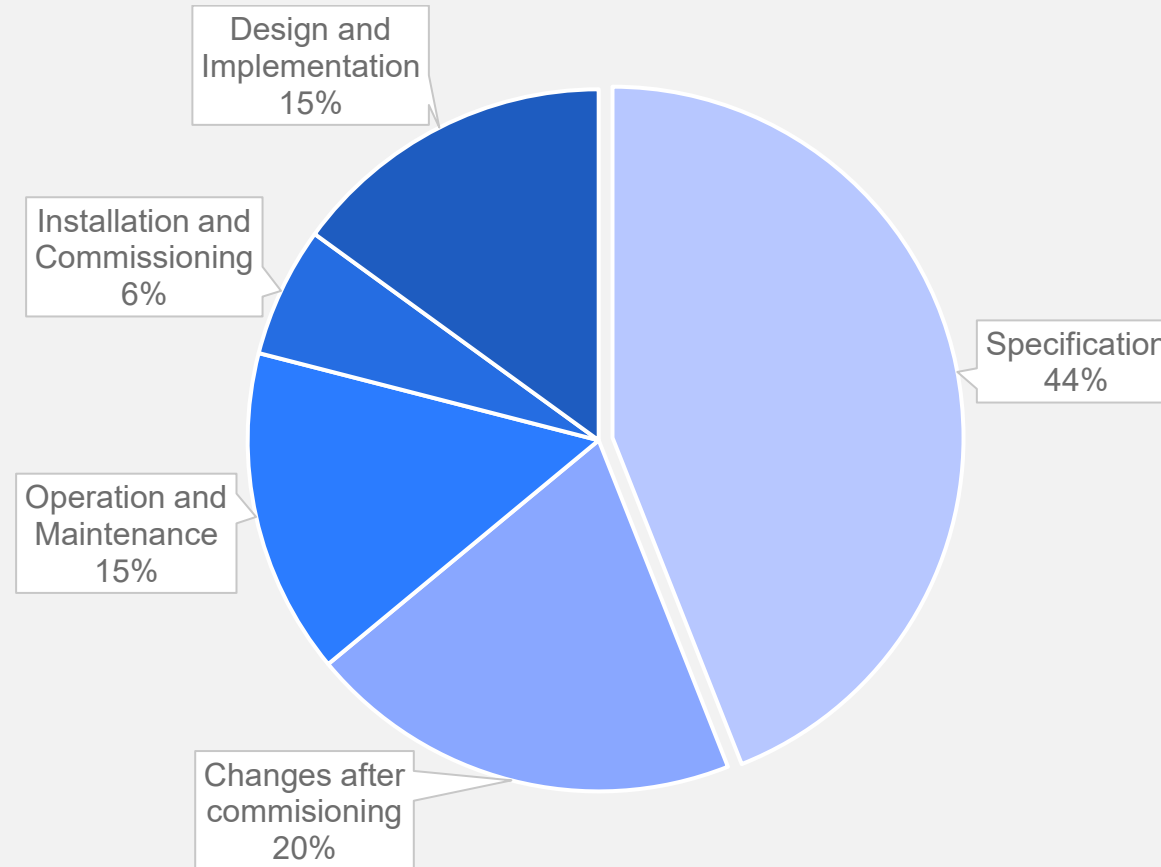
- **Traceability** is the ability to trace every stage of a product's journey, from its inception to design, creation, testing, implementation, and upkeep, all the way back to the original safety requirements



- **Auditability** is a requirement that refers to the ability of a system to provide a complete and accurate record of all activities and transactions that occur within it.



# Why are Auditability and Traceability Important in Projects?



**Causes of Incidents**



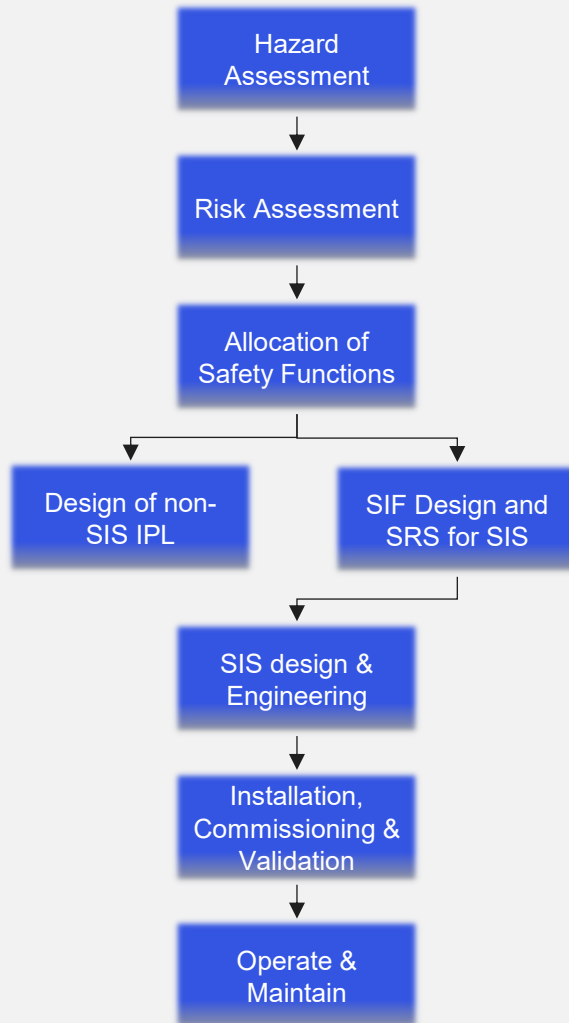
Out of control: Why control systems go wrong and how to prevent failure?  
(2<sup>nd</sup> edition, source: © Health & Safety Executive HSE - UK)



# **FS Management in Projects. A real-world example**

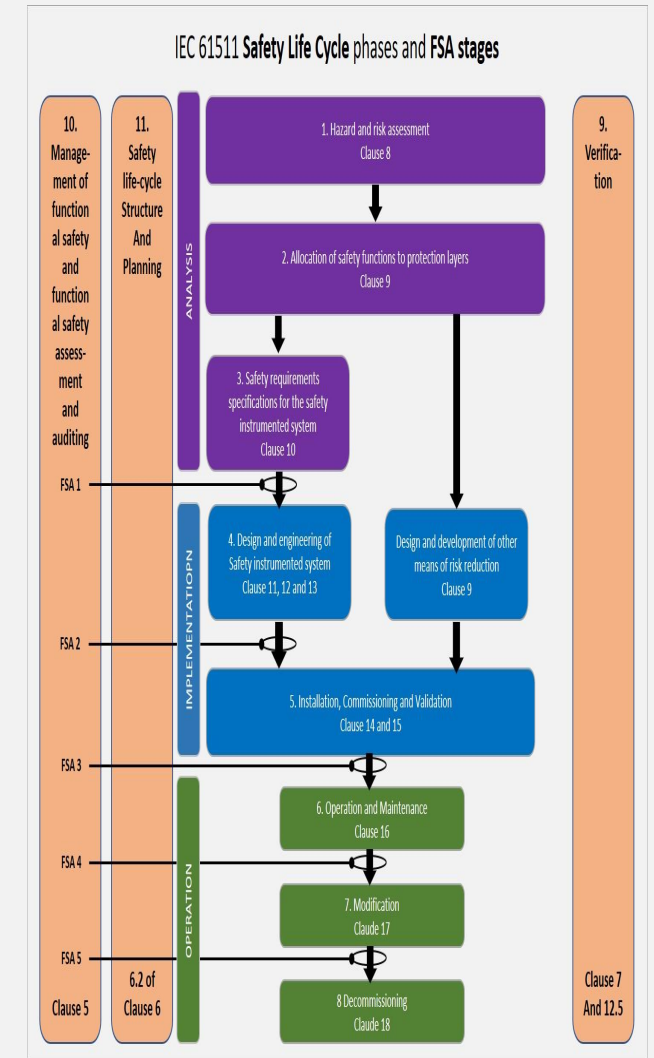


# Project FS Management System

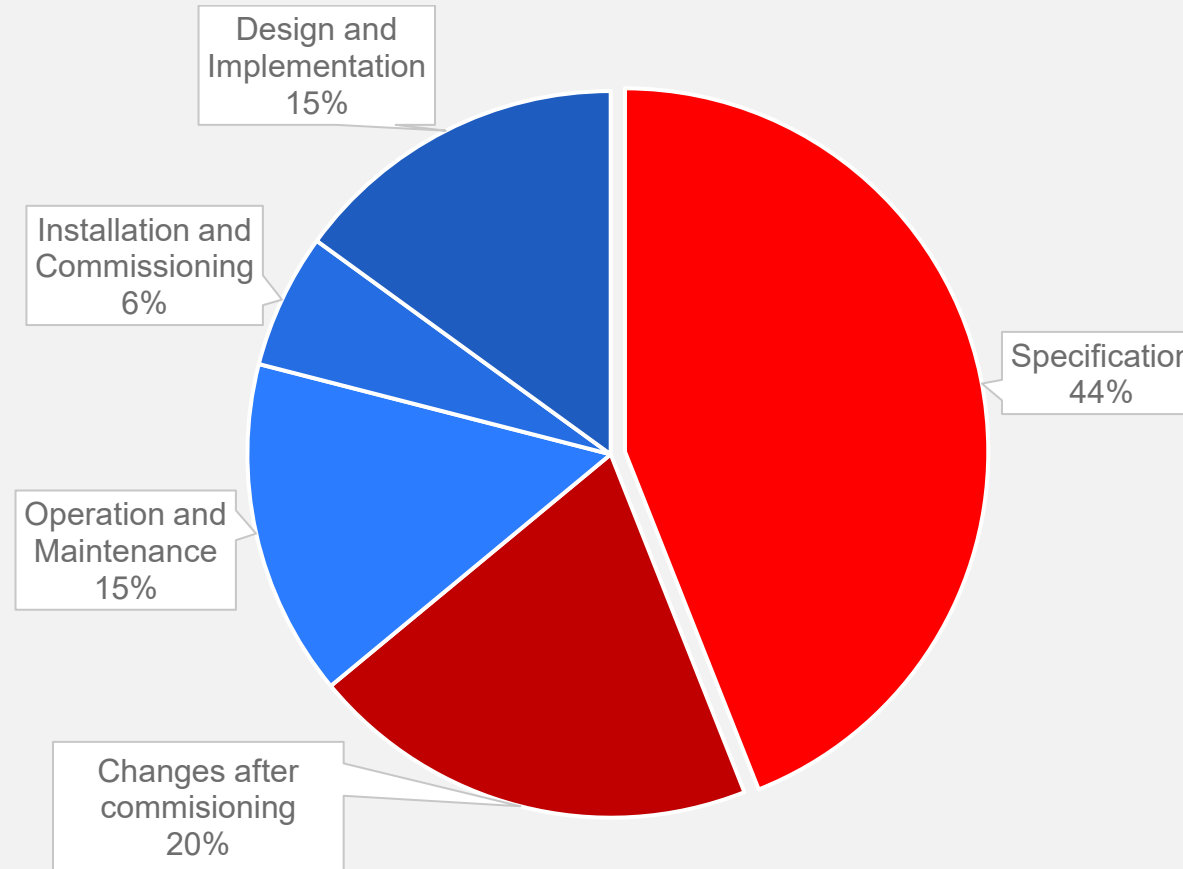


Activity	Responsible/Discipline	Data management System
HAZOP	Customer, EPC contractor Technical Safety	Excel, PHApro, other
LOPA	Customer, EPC contractor Technical Safety	Excel, PHApro, SIFpro
SIF Design	EPC contractor Instrumentation	Excel, SIFpro, ExSILentia
SRS development	EPC contractor Instrumentation	Excel, Word, PDF
Hardware/Software design, FAT	System Integrators, SIS vendors	Excel, Word, PDF
SAT	System Integrators, SIS vendors, EPC contractor	Excel, Word, PDF
Proof Testing, Maintain SIL	Customer Personnel, Maintenance dept.	CMMS such as SAP/Maximo

# Complexity leading to Oversights and omissions



# Why are Auditability and Traceability Important in Projects?



***Causes of Incidents***

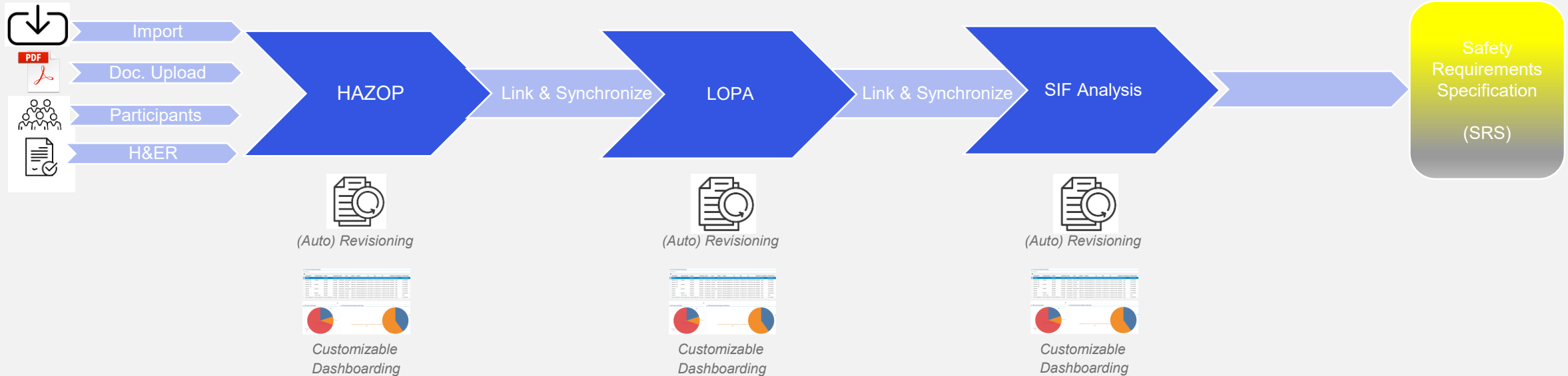


Out of control: Why control systems go wrong and how to prevent failure?  
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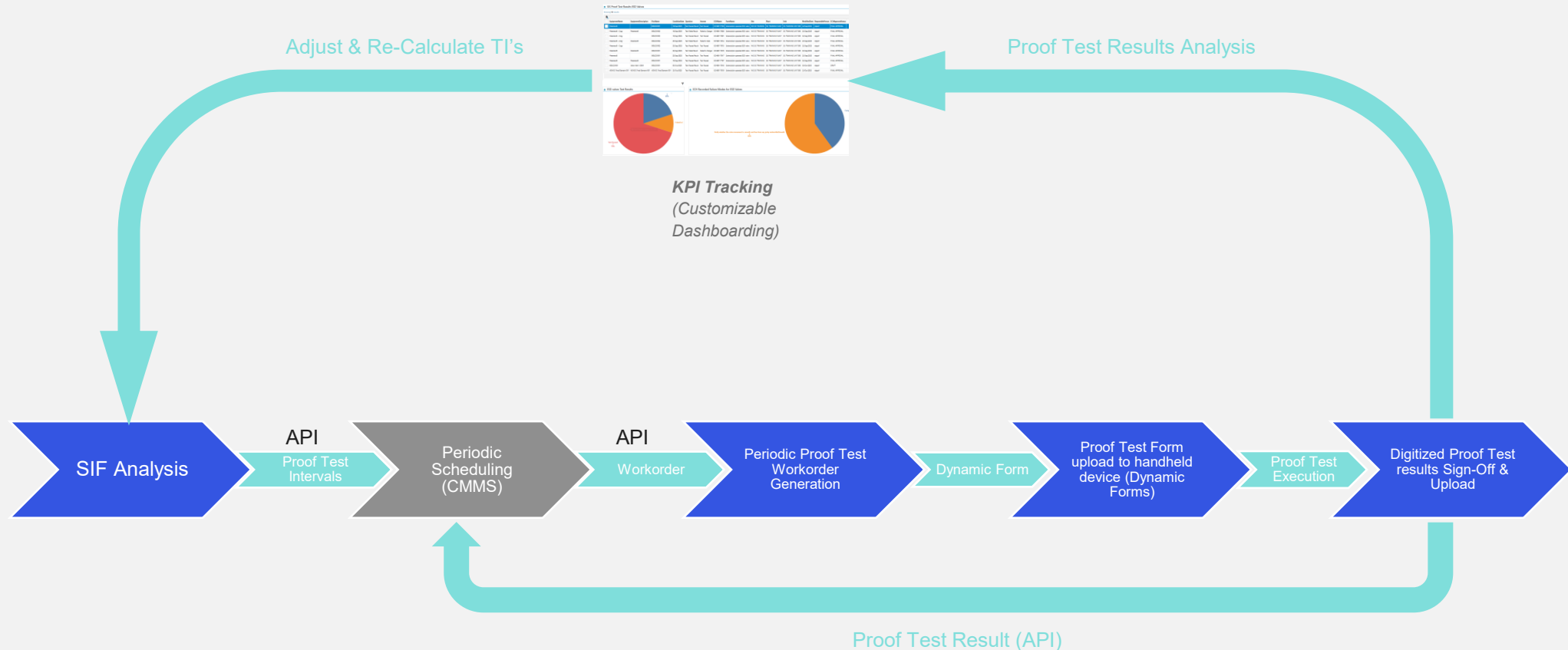
# **Simplify through Digitization: Single Software, Single source of truth**

# Digitize FS Design phases with Smart Software

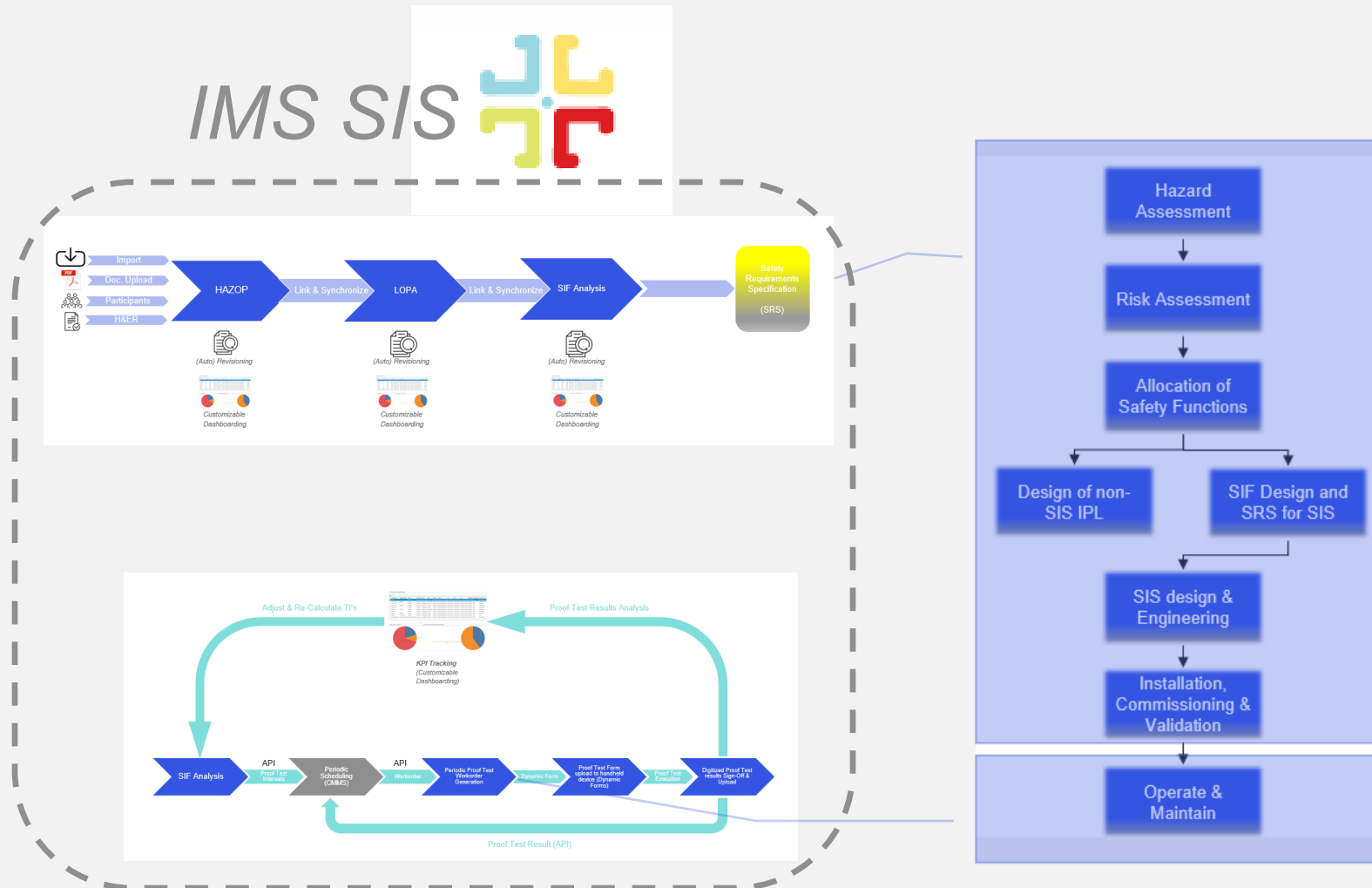


- *Single Point of Entry for all Discipline Engineers involved in the FS Lifecycle*
- *Single Source of Truth for all FS Documents of the FS Lifecycle*

# Digitize FS Operate & Maintain phase with Smart Software



# IMS SIS: Design, Maintain & Operate your FS Lifecycle



# Summary

Auditability and Traceability in Design are crucial to setting the right SIS integrity requirements

Setting up proper Functional Safety Management on projects and plants is complex

Use smart software that helps engineers maintain situational awareness of their SIS

Use the same software tool during Design and Operate phase to smoothen the transition



## Areas of application



### Oil & Gas: Upstream Operations

- Onshore & offshore production facilities
- Flowlines & manifolds
- Floating installations (FPSO, FLNG & FSRU)
- Early production & test facilities



### Petrochemicals & Chemicals

- (Petro)chemical units
- Chlor-alkali plants
- Acid production (sulfuric, phosphoric)
- Specialty & performance chemicals
- Integrated chemical complexes
- Fertilizers



### Downstream & Processing

- Refineries
- LNG liquefaction & regasification
- GTL (Gas-to-Liquids) plants
- Fertilizer & methanol plants
- Hydrogen, industrial gases



### Midstream & Storage

- Marine & land-based terminals
- Pumping stations
- Gas dehydration & compression units
- Tank farms (crude, refined, chemicals)
- Collection hubs



### Asset-Heavy Industries

- CCS (Carbon Capture & Storage)
- Blue/green hydrogen plants
- Biofuels/renewable Diesel Facilities
- Mining & mineral processing
- Pulp & paper (Pressure Systems)

## Types of Equipment

Safety Instrumented Systems:

- Sensors
- Logic Solvers
- Final Elements

## Interfaces



HEXAGON

AVEVA

aspentech

ORACLE



## Integrity Management Toolkit

### Process Safety & Risk Management

HAZOP • Bowtie viewer • LOPA (SIL Determination) • SIF Analysis

### Full SIS Lifecycle

Master Equipment (Failure Rate Database) • Test Interval Optimization  
Scheduling • Observed Failure Rate Calculator • Flexible RAM

### Testing & Operational Tools

Proof Test Procedures in Dynamic Forms • Import & Export Capabilities

### Visualization, Reporting & User Management

Standard/Customizable Dashboards • Standardized/Customizable  
Reports and Queries • Extensive User Management Capabilities



## Compliance

IMS is supporting:

- Auditable Events (Revision Management)
- ISO 9001
- Microsoft Gold Partner
- IEC612511, EEMUA 159
- IEC 61508, IEC 61551

## Market Recognition

verdantix

Recognized in the **Smart Innovators 2025 report** for market-leading functionality in Inspection Management, Integrity Operating Windows & Process Safety.

## Cenosco Academy

- 3-days Tool Training
- HAZOP; LOPA; SIF Analysis; Complete

Contact Us

Learn more



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# Thank you for your engagement!

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