

The background of the image is a deep purple with a network of glowing, intersecting diagonal lines in shades of cyan and magenta, creating a sense of dynamic movement and technology.

AVEVA WORLD

ACCELERATE INDUSTRIAL INTELLIGENCE

2026

Sener - Aveva World 2026

Engineering the Future of Clean Energy: SENER and Fortescue in the
Pecém Green Hydrogen Hub

Speakers



Gustavo Yamamoto

Engineering Manager

Sener Energy - Brazil

São Paulo - Brazil



Sofia Carnalla

BIM Manager

Sener Energy - Mexico

Mexico City - Mexico



Ricardo Sousa

BIM Manager

Sener Energy - Brazil

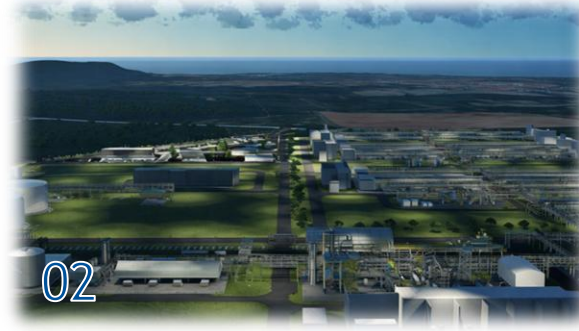
São Paulo - Brazil

Index



01

Sener



02

The Port of Pecem Green
Hydrogen Project



03

Key Challenges and Technical
Responses



04

Results and Conclusion

Our global footprint

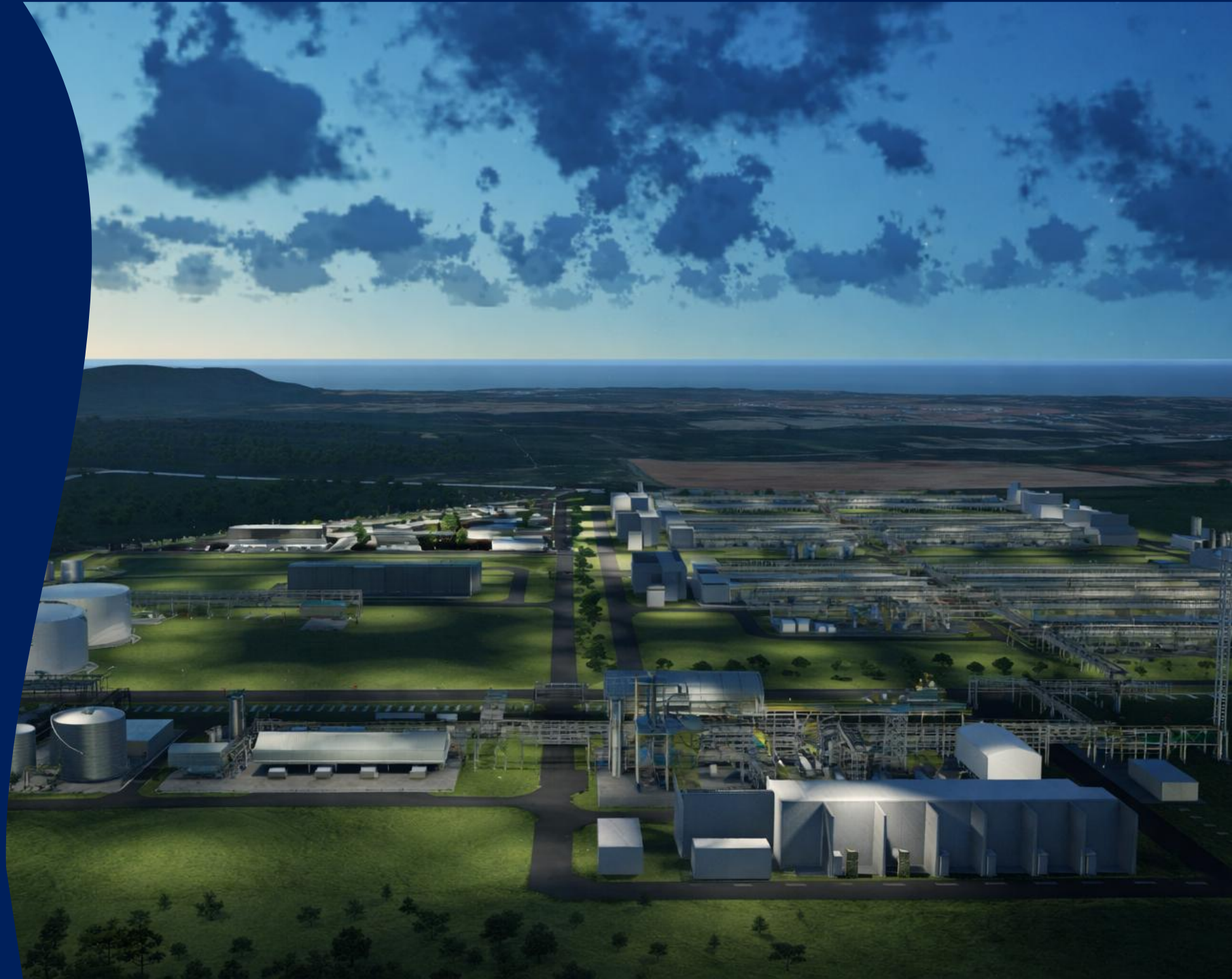


Grupo Sener

Private engineering and technology group



2. The Port of Pecem Green Hydrogen Project

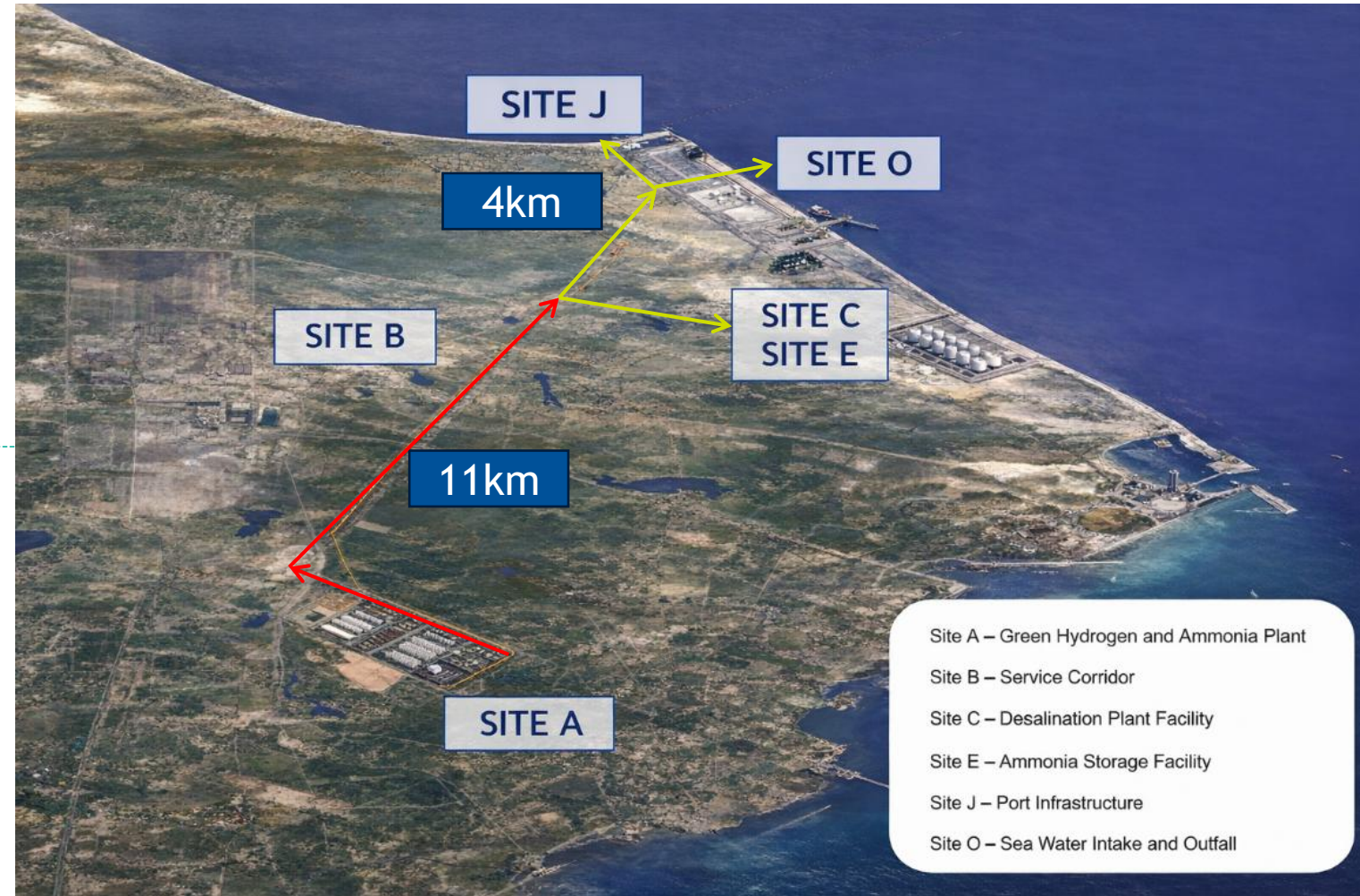
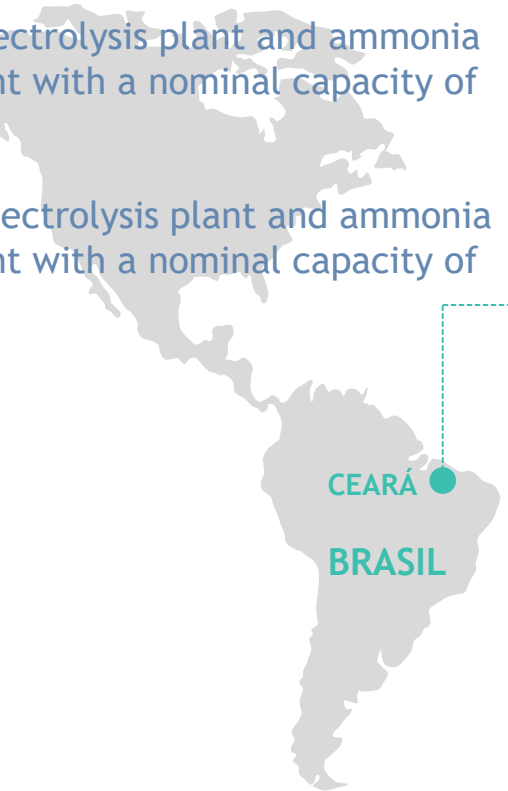


Porto do Pecém Project - Green Hydrogen and Ammonia Plant

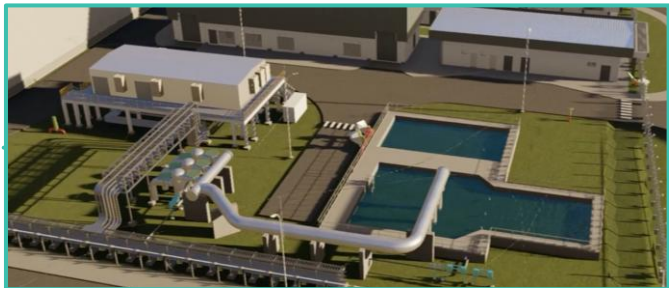
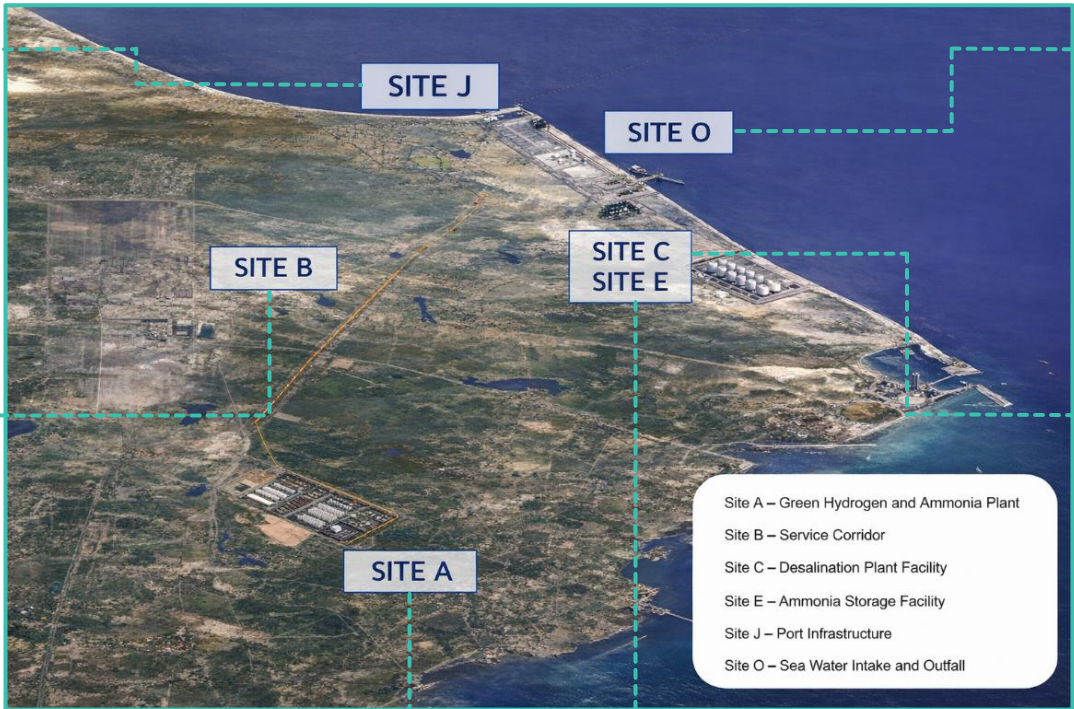
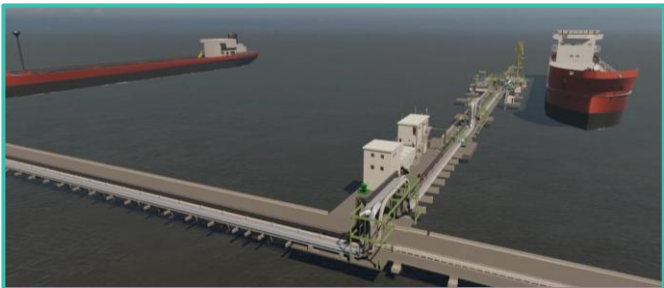
Feed Phase -> CAPEX +/- 10%

1st Phase: - 1.2 GW H₂ electrolysis plant and ammonia synthesis plant with a nominal capacity of 2,700 MTPD.

2nd Phase: - 2.4 GW H₂ electrolysis plant and ammonia synthesis plant with a nominal capacity of 5,400 MTPD.



Porto do Pecém Project - Green Hydrogen and Ammonia Plant





3. Key Digital Challenges and Technical Responses



Main Challenges

Project Challenges

High-complexity project

- Large volume of engineering information
- Multidisciplinary team distributed globally
- High level of technology involved
- Project-huge dimension.
- Database separation by site.
- Development of the model in local coordinates and integration in geographic coordinates.
- Sharing of databases with other countries and the return of these databases.
- Multidisciplinary modeling across different engineering software platforms.



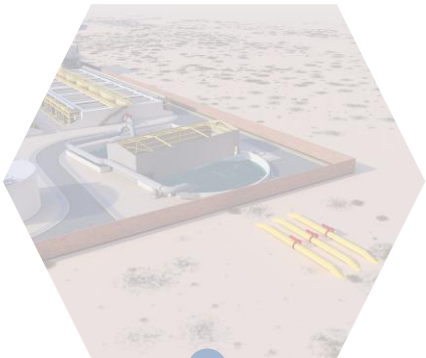
Multi-Platform Software Project

Multi platforms Project

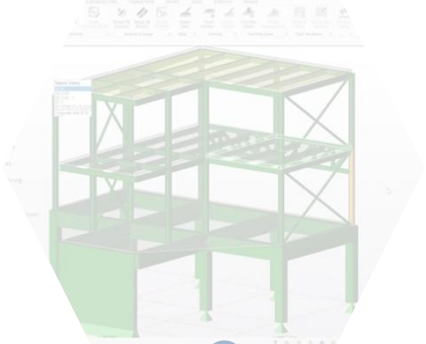


AVEVA Solutions

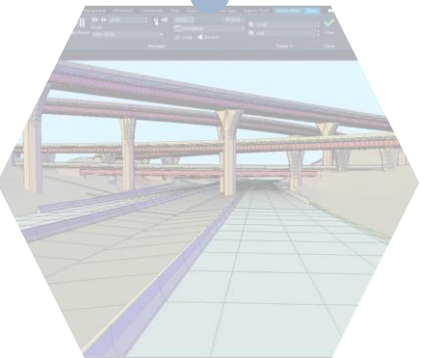
Point Cloud Software



Structural Steel Modeling Software



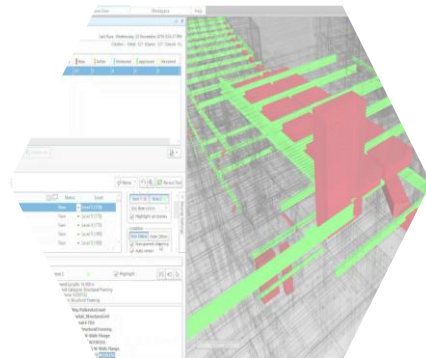
Clash Detection Software



Infrastructure Modeling Software



Civil and Architectural Modeling Software



3D Model Viewer

High Complexity Engineering Project:

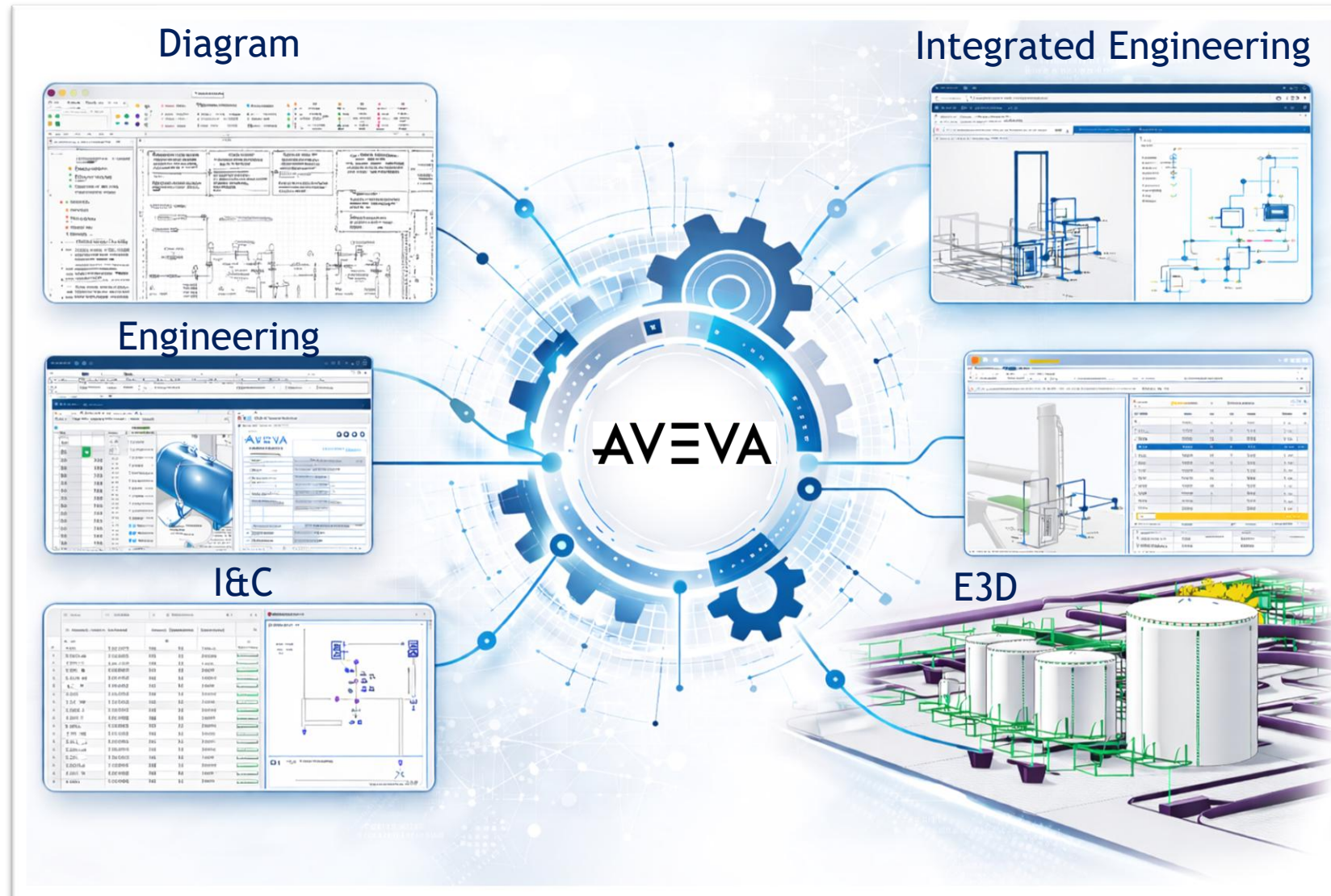
Due to the high level of data, interfaces, and model integration involved

Key Modeling Indicators

- **61** Sites Created
- **208** Zones Created
- **636** Pipes Modeled
- **55** Engineering Flow Diagrams
- **438** Equipment Items Created
- **299** Attributes Defined
- **84,700** m of Piping
- **1,634,959** kg of Piping Material



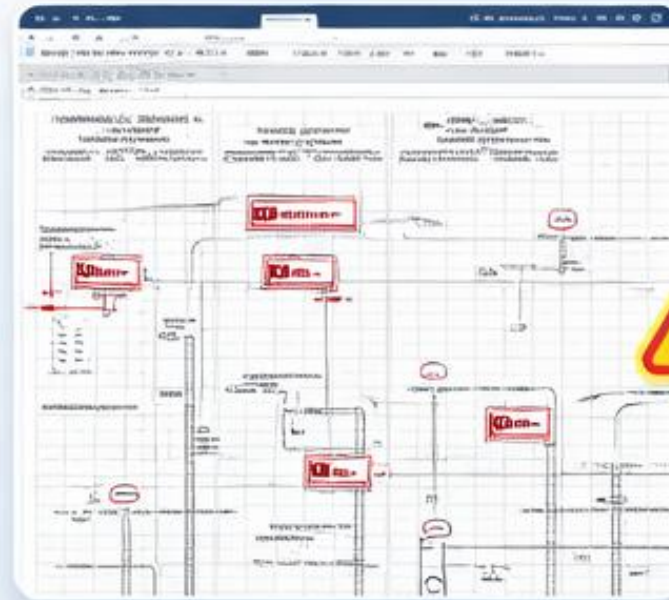
AVEVA Unified Engineering



Issues and Lessons

- Initial use of tools in a standalone manner
- First synchronization: +20,000 inconsistencies
- Lack of experience in project integration
- Support from the AVEVA Brazil team

Integration & Inconsistencies

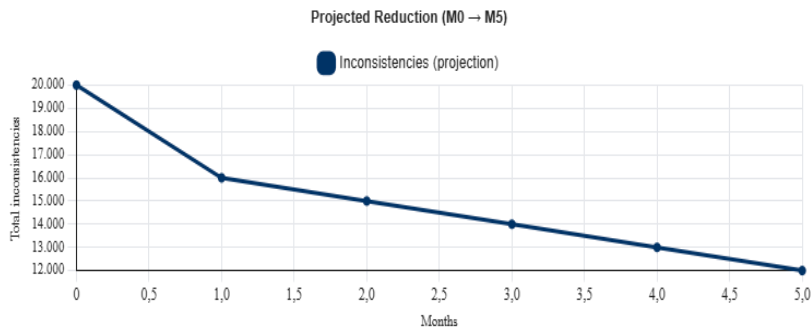


4. Results and Conclusion



Results

- 20,000 → < 1,000 inconsistencies (from first synchronization to project completion)
- Continuous reduction throughout the project
- Tag validation & other data validation inconsistencies nearly eliminated by the end
- Increased data reliability
- Process workflow aligned with ISO 19650 WIP-shared-published



SENER enables engineering project with real time multidisciplinary collaboration

Challenge

- Working with AVEVA Engineering & AVEVA Diagrams for the first time
- Shared Database with different countries.
- Integration of information across different platforms

Solution

- During the project, the SENER team received training for implementation, with the support of the AVEVA Brazil team, delivered in person at SENER's offices.

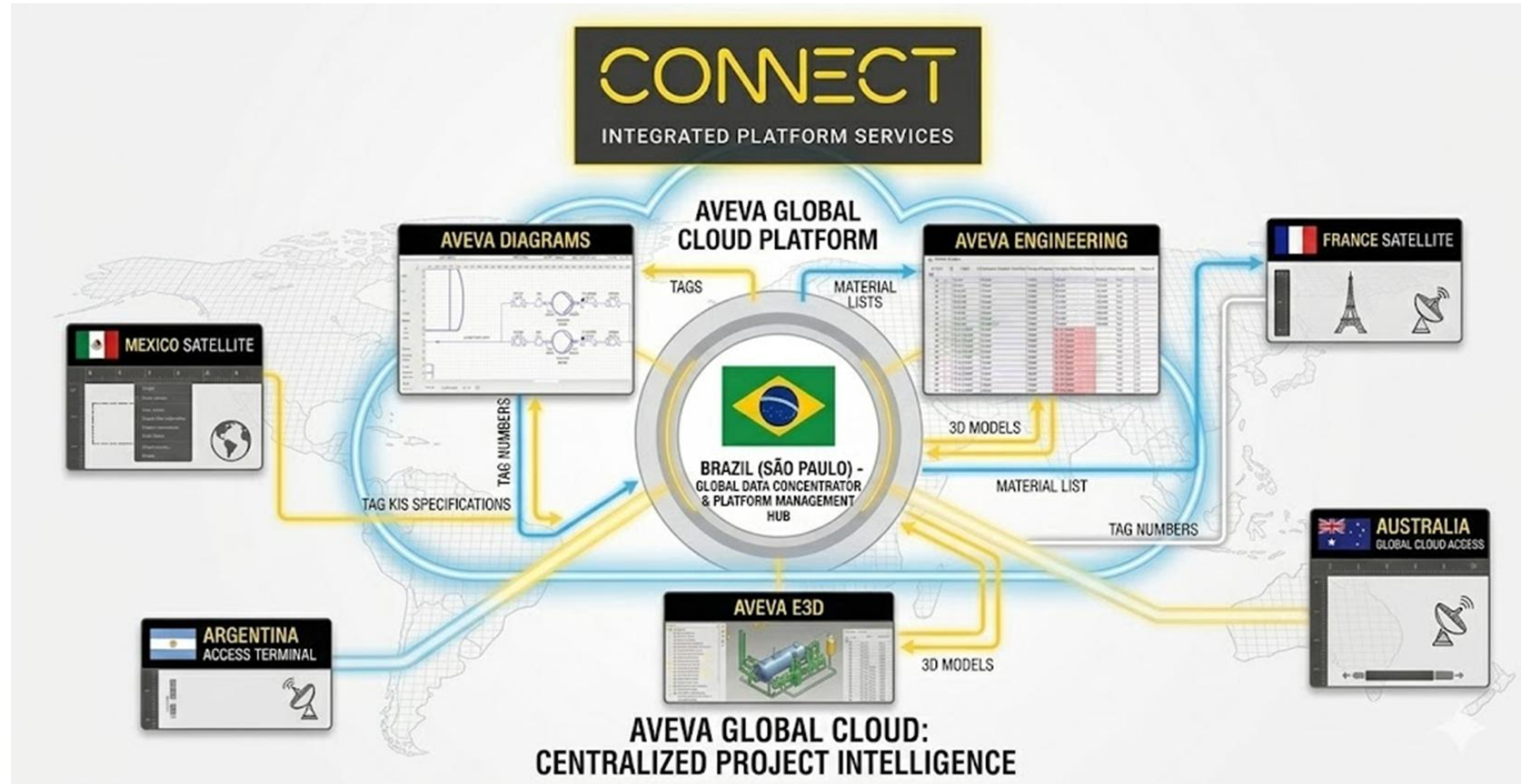
Results

- Integrated and automated data environment
- Improved and standardized workflows
- Execution of projects with high quality standards



Conclusion & Next Steps

- Integration was key to success
- Enhance data control and traceability
- Next step: cloud integration
- Evolution through the using of AI



Thank you!!!



AVEVA

