

OCTOBER 26, 2023

---

# Intelligent 3D model conversions in AVEVA™ E3D Design

Thiago Oliveira

AVEVA

---

# Agenda

- Scenario and motivation
- Why should I consider this?
- The how: different conversion options
- Unlocking new opportunities
- Success stories
- Call to action

# Scenario and motivation

A little of our customers' reality in using different software vendors

- Several 3D database formats
- Complex quality and integrity checks
- Unawareness of all 3D conversion options

Owner  
Operator



- Heavier infrastructure vs different software requirements
- Different skill sets required
- Multiple software contracts

EPC



- Different data set formats
- Lack of clarity on scanning parameters for the quality of data sets

Laser scanning  
company

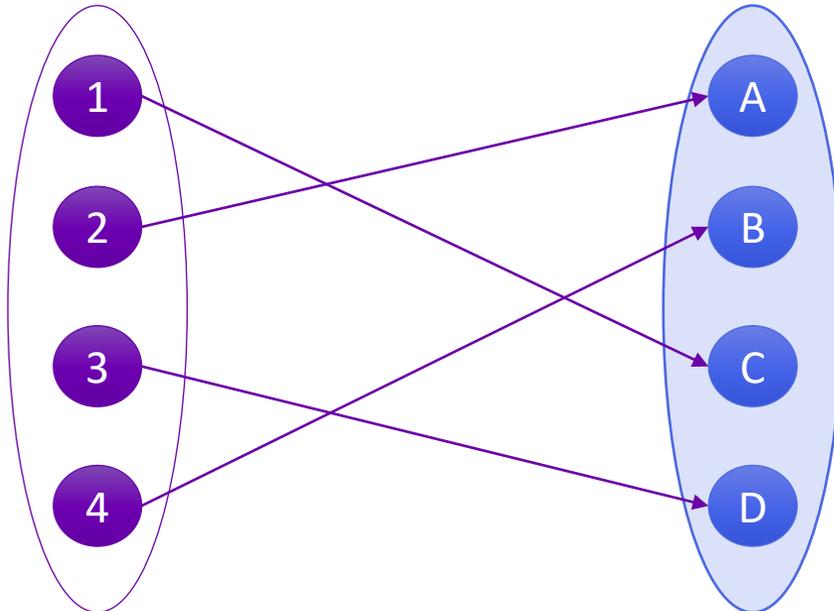


# Scenario and motivation

## CORRELATION PROCESS

External software vendor

OTHER SYSTEM



## COMMON OUTCOME



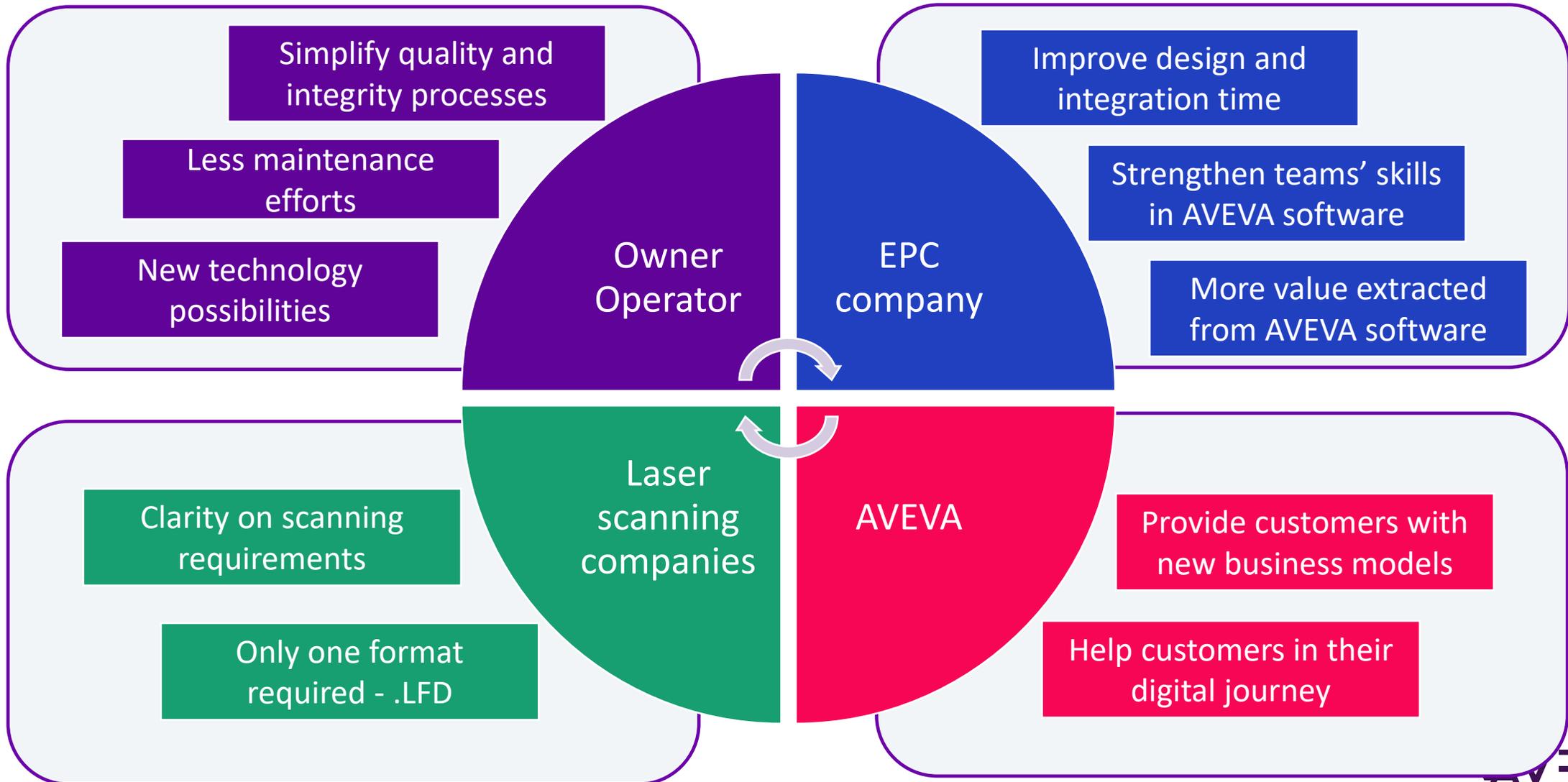
Import geometries with some data only (not a conversion)

Increased efforts in using referenced model



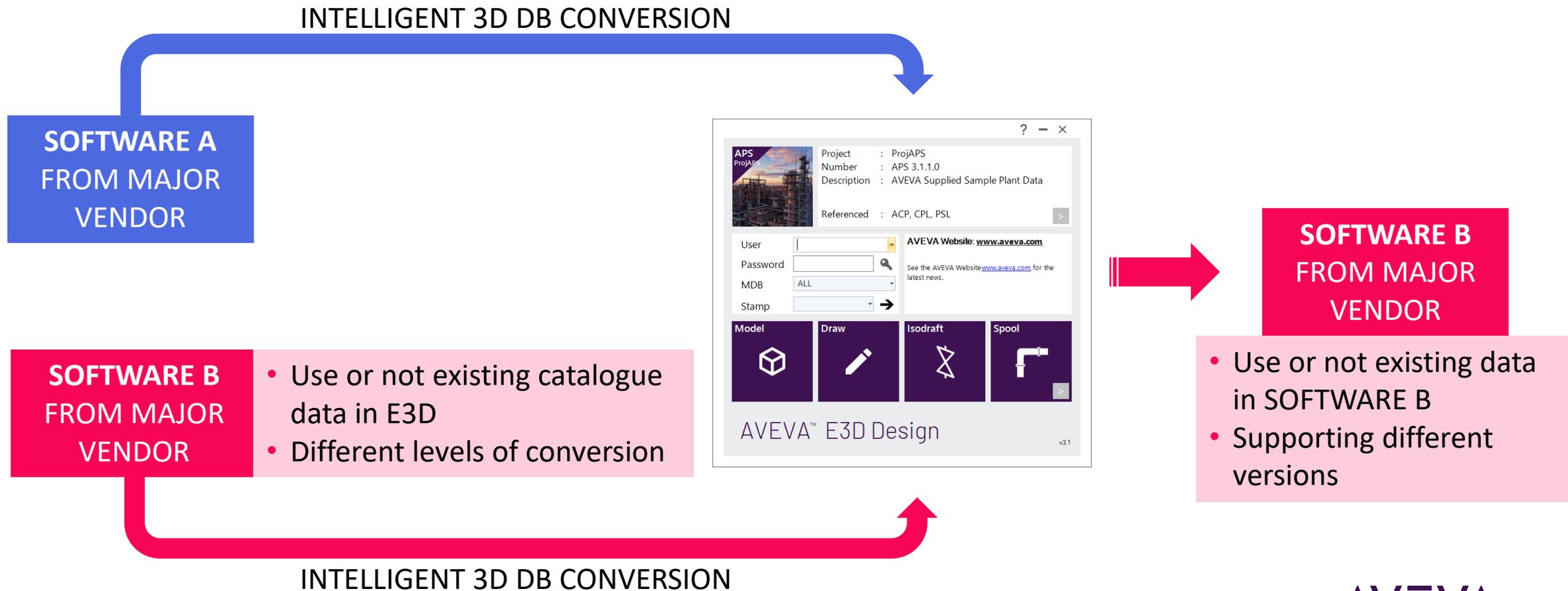
Uncertainties regarding the support of some of the external vendors' tools

# Why should I consider this?



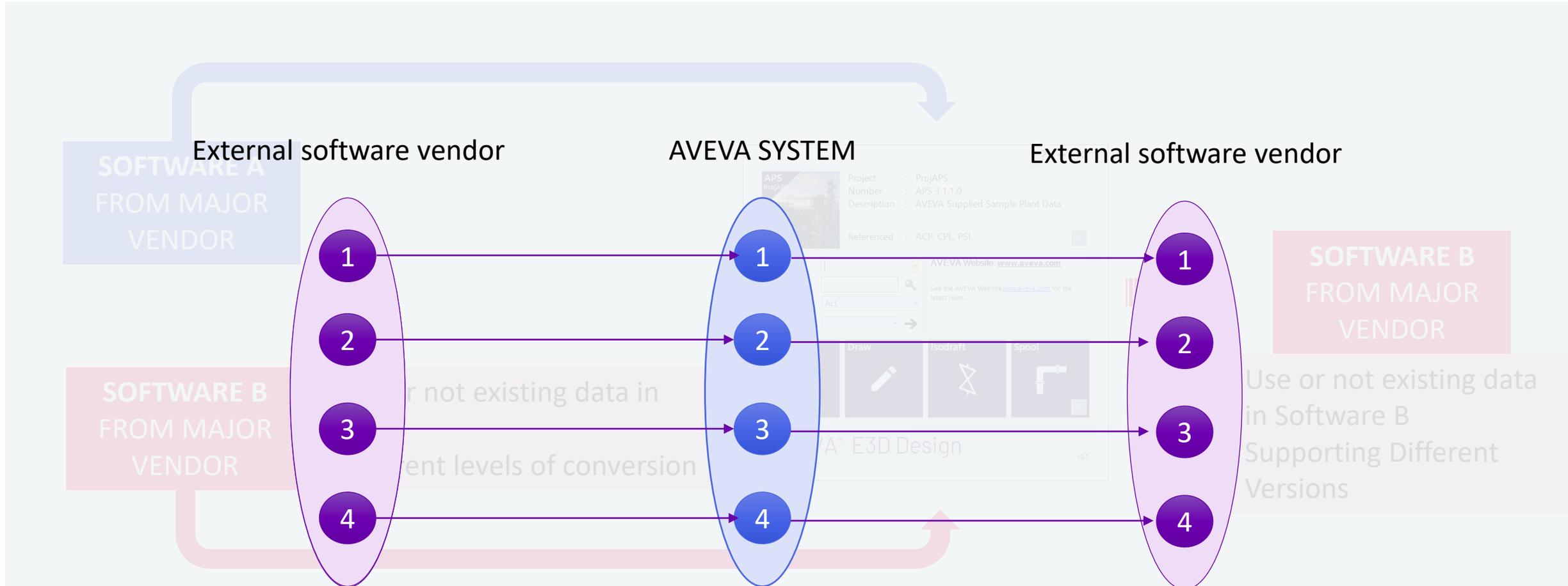
# The how: Different conversion options

Not just a simple model import



# The how: Different conversion options

Not just a simple model import



---

# The how: Different conversion options

## Advantages of the process

Cats & specs +  
attributes and  
materials

Project reuse for  
different  
purposes

3D multi-  
discipline support

Project audit  
before conversion

Enable  
deliverables  
generation in E3D

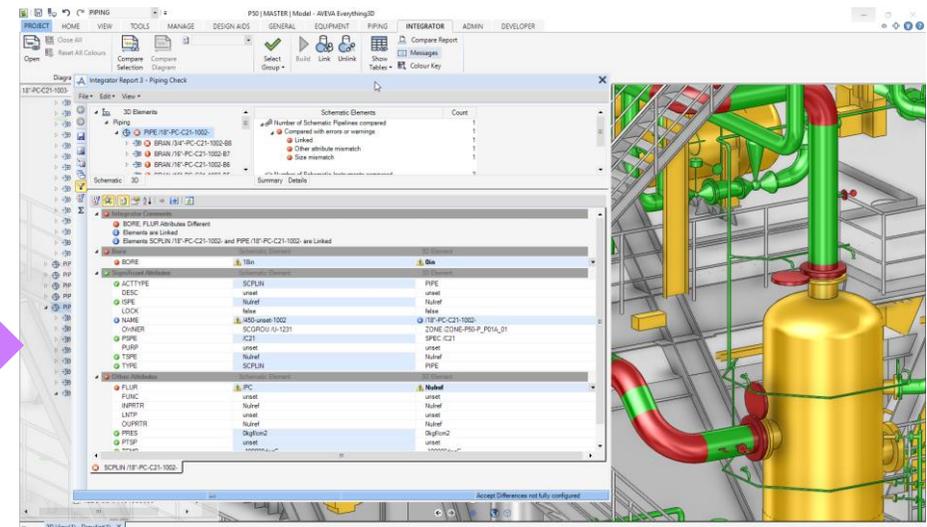
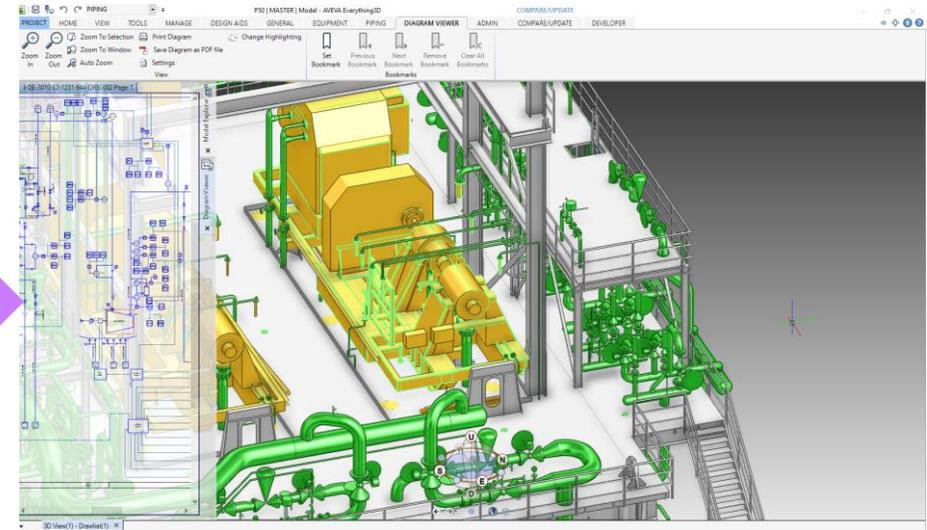
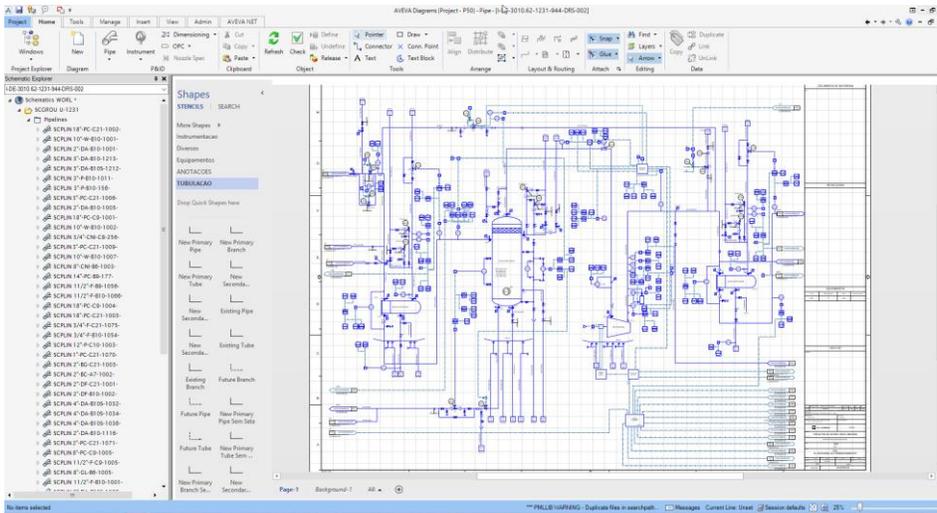
Executed as a  
service by AVEVA  
(CaaS)

# Unlocking new opportunities

No need to stop at the 3D databases

Intelligent PI&Ds (manually created)

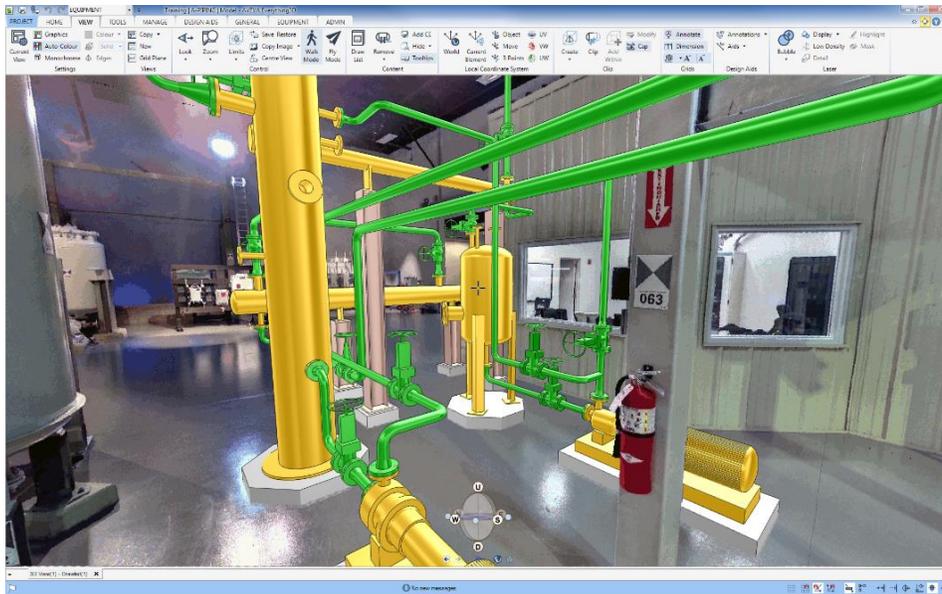
## Schematics and 3D model integration



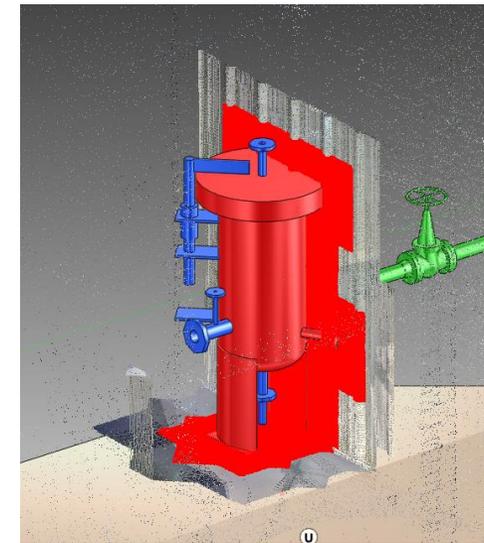
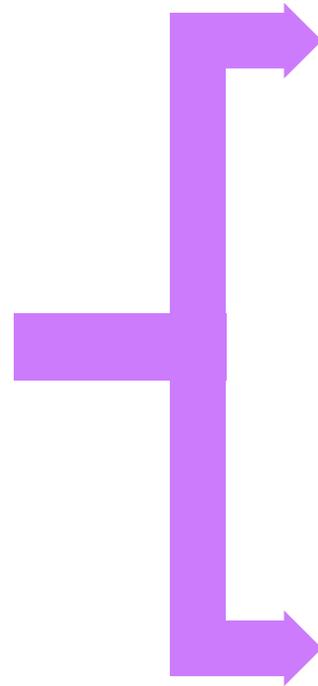
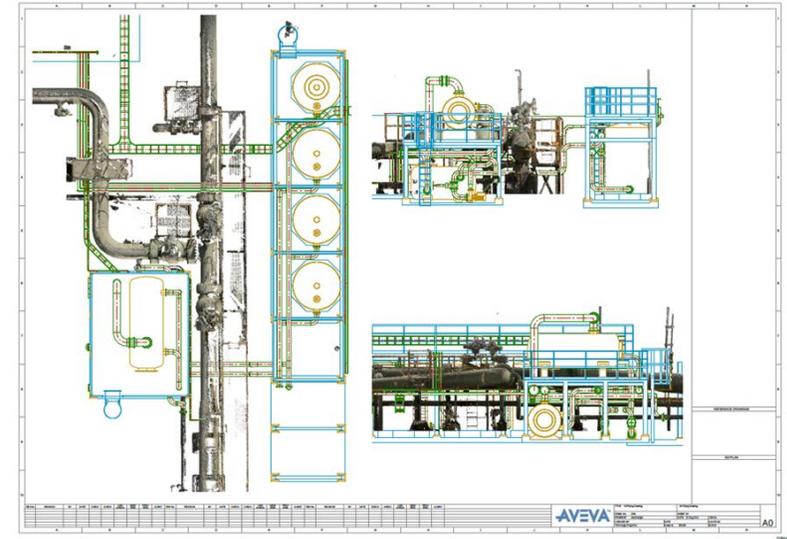
# Unlocking new opportunities

No need to stop at the 3D databases

## Laser scanning integration

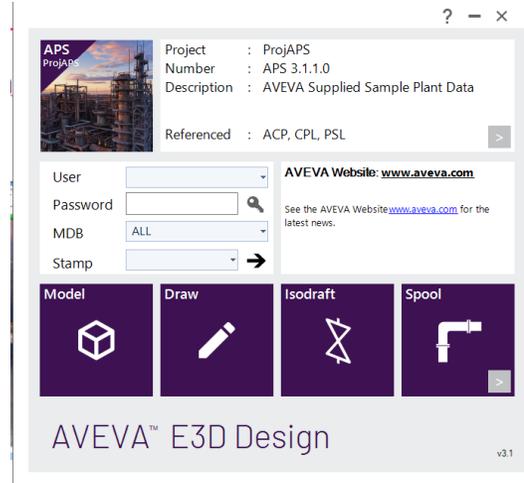


Drawings with 3D model and laser scanning data



Clash detection between 3D model and laser scanning

# Unlocking new opportunities



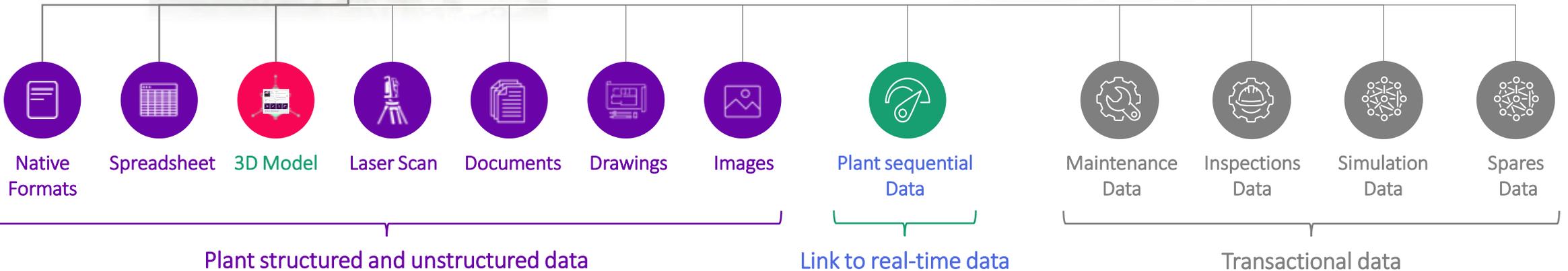
# Unlocking new opportunities

Digital twin



AVEVA™ Asset Information Management

Physical asset



# Success stories

## Hundreds of successful conversions

- Different industry segments
- Different regions

## The project size is not an issue

- Massive projects
- Medium projects
- Small projects

## Different goals – one solution

- Using 3D to develop engineering projects
- Using cats & specs for new projects
- Using 3D for AIM

---

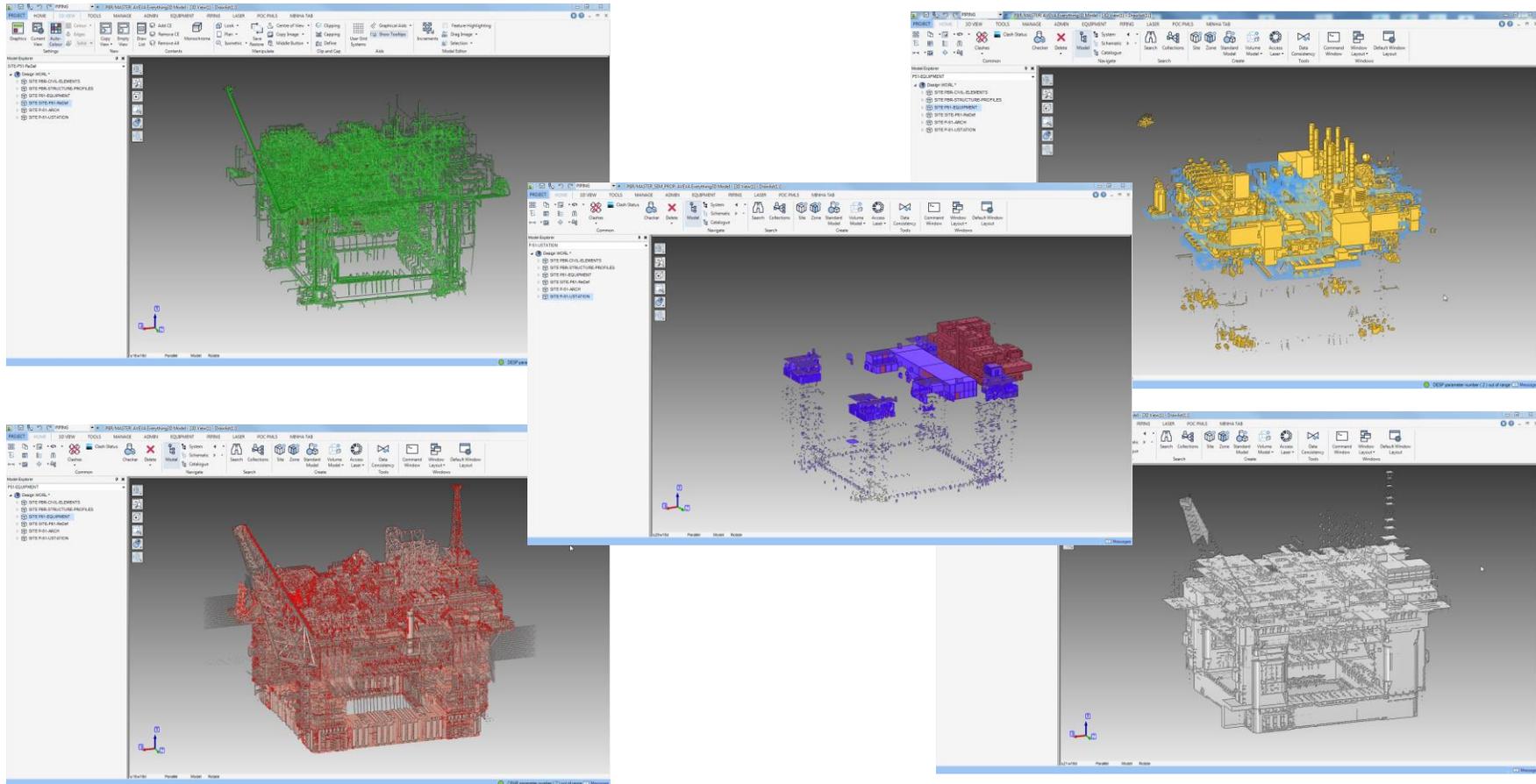
# Success stories

## PETROBRAS

- One of the most advanced O&G companies in oil exploration and production in deep waters
- Fleet with over 200 ships and rigs
- Almost 100 conversions from old 3D format into AVEVA E3D Design

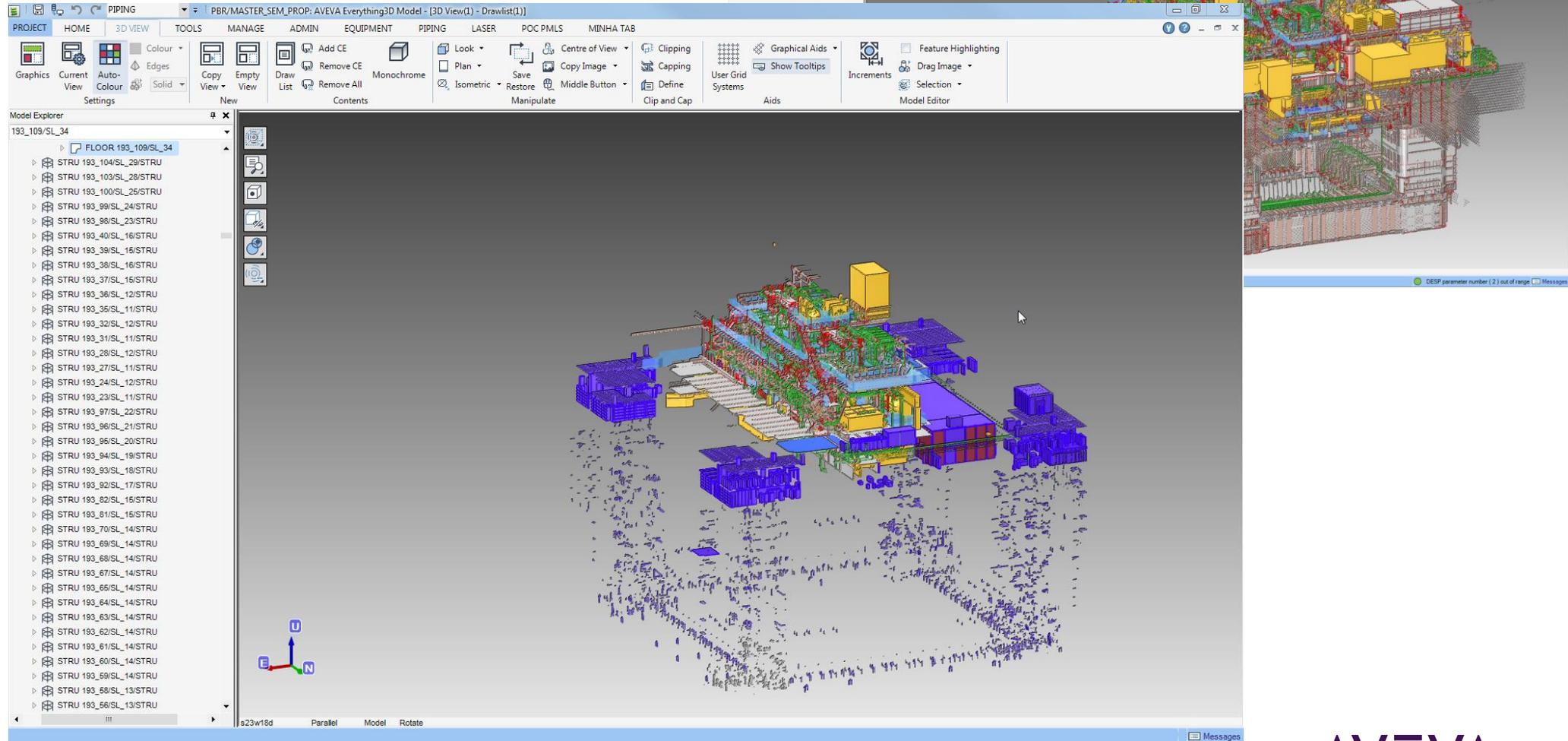
# Success stories

## PETROBRAS



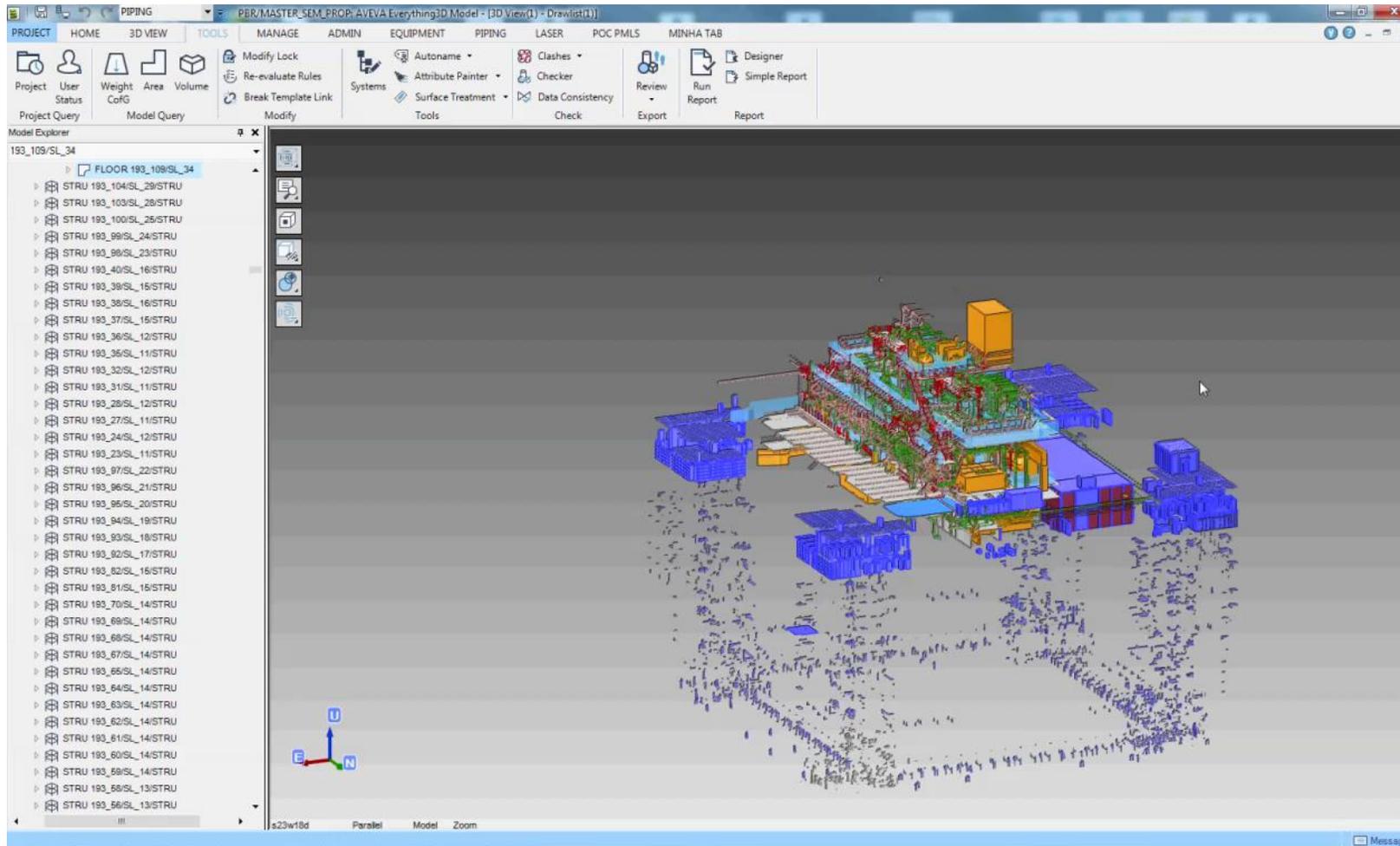
# Success stories

## PETROBRAS



# Success stories

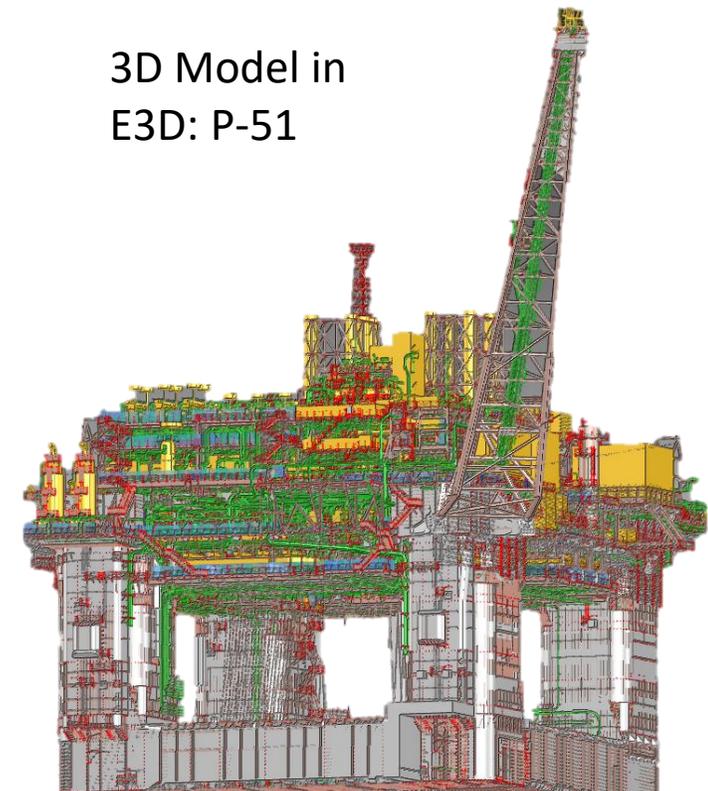
## PETROBRAS



---

# Success stories

## PETROBRAS



---

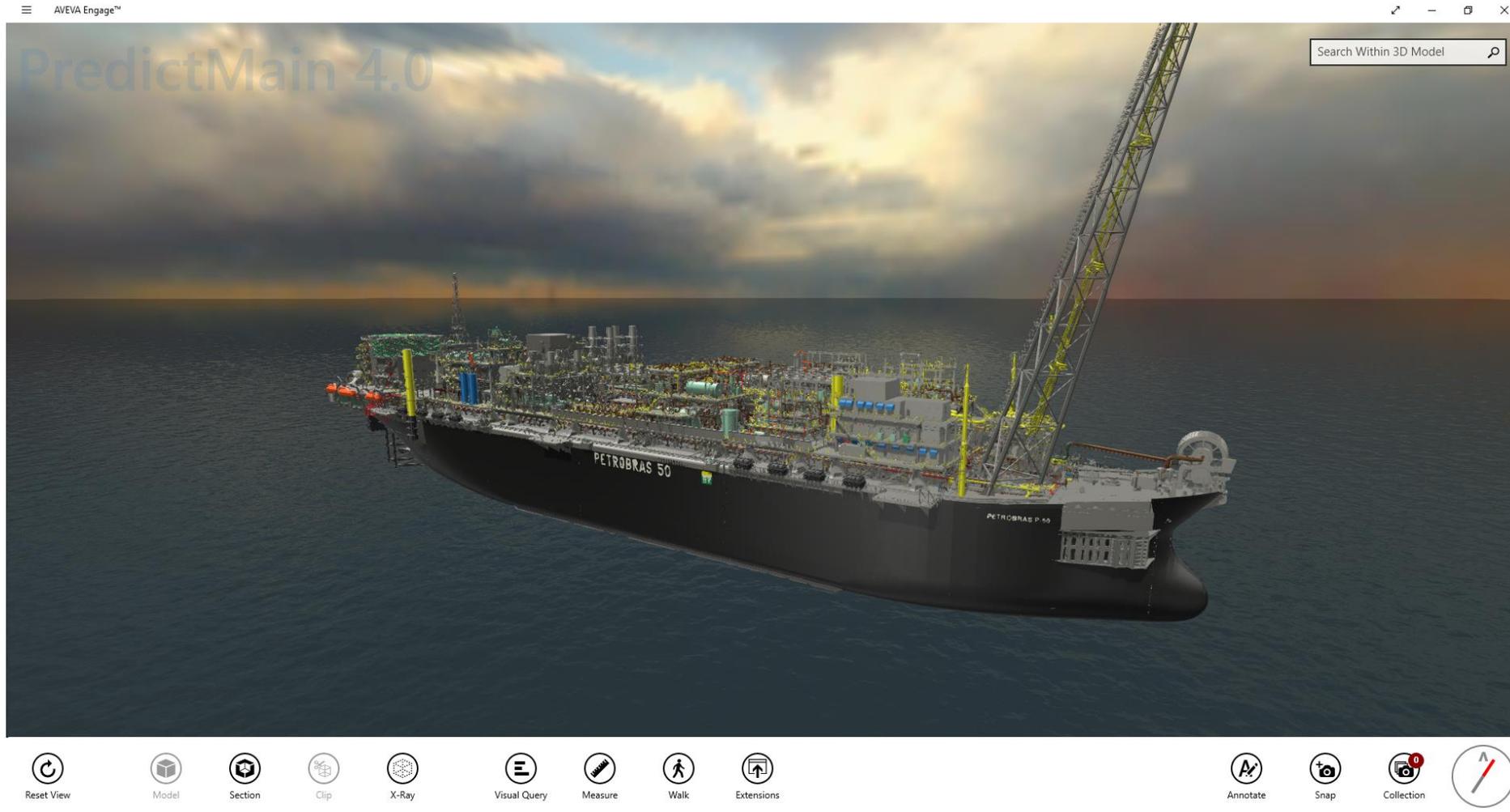
# Success stories

## REPSOL SINOPEC AND PETROBRAS

- R&D project to develop predictive maintenance models with 3D visualization – 1 FPSO
- Integration with operation and maintenance data
- Integration with AVEVA™ 3D Asset Visualization and predictive maintenance system (AVEVA™ Predictive Analytics)

# Success stories

## REPSOL SINOPEC AND PETROBRAS



# Success stories

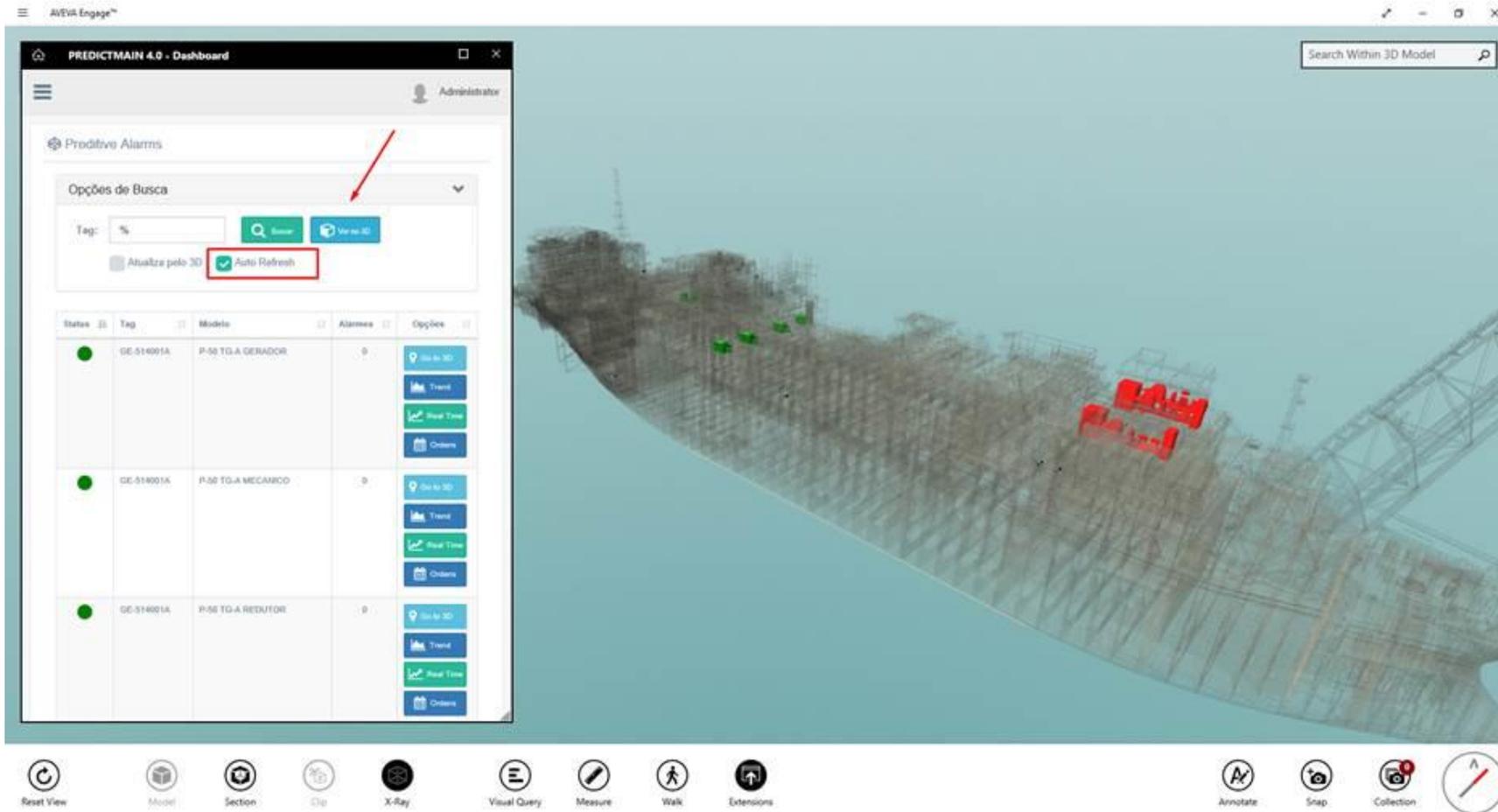
## REPSOL SINOPEC AND PETROBRAS

The screenshot displays the AVEVA Engage PredictMain 4.0 interface. On the left, a dashboard titled "SAP - Ordens Manutenção" shows a table of maintenance orders. The table has columns for Data Inicial, Ordem, Campo Seleção, Descrição, Plano, Nota, and Opções. Three records are visible, each with a "Destacar 3D" button. On the right, a 3D model of an industrial facility is shown. A search bar at the top right of the 3D view says "Search Within 3D Model". A callout box is open over the 3D model, displaying the tag "P-UC-123101B-04" and a small image of the component. At the bottom, a toolbar contains icons for various functions: Reset View, Model, Section, Clip, X-Ray, Visual Query, Measure, Walk, Extensions, Annotate, Snap, Collection, and a redaction tool.

Data Inicial	Ordem	Campo Seleção	Descrição	Plano	Nota	Opções
26/02/2018 00:00:00	2017291099	P-UC-123101B-04	PARBTO_Recomendações P-UC-123101A-04 EXT		10258803	Destacar 3D
26/02/2018 00:00:00	2017688703	P-UC-123101B-04	RT1 C - Subst. Escape P-UC-123101B-04			Destacar 3D
26/02/2018 00:00:00	2018095702	P-UC-123101B-04	RT1 D - Pêra Caixa, braca P-UC-123101B			Destacar 3D

# Success stories

## REPSOL SINOPEC AND PETROBRAS



---

# Success stories

## REPSOL SINOPEC AND PETROBRAS



---

## Call to action

- Review your existing legacy 3D models and re-evaluate optimization opportunities
- Check the possible opportunities you might be losing by using one specific 3D format or multiple ones
- What other technologies are you not using in their optimized state because your current 3D technology doesn't allow you to do so?
- Call AVEVA if you are unsure about your scenario or if you have new situations

---

# THANK YOU



Thiago Oliveira

Director, Technical Support, Americas

- AVEVA
- [Thiago.Oliveira@aveva.com](mailto:Thiago.Oliveira@aveva.com)



# Questions?

Please wait for the microphone.  
State your name and company.



# Please remember to...

Navigate to this session in the mobile app to complete the survey.



# Thank you!

This presentation may include predictions, estimates, intentions, beliefs and other statements that are or may be construed as being forward-looking. While these forward-looking statements represent our current judgment on what the future holds, they are subject to risks and uncertainties that could result in actual outcomes differing materially from those projected in these statements. No statement contained herein constitutes a commitment by AVEVA to perform any particular action or to deliver any particular product or product features. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect our opinions only as of the date of this presentation.

The Company shall not be obliged to disclose any revision to these forward-looking statements to reflect events or circumstances occurring after the date on which they are made or to reflect the occurrence of future events.

 [linkedin.com/company/aveva](https://www.linkedin.com/company/aveva)

 [@avevagroup](https://twitter.com/avevagroup)

#### ABOUT AVEVA

AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

Learn more at [www.aveva.com](https://www.aveva.com)