ESTECO
INTERNATIONAL
USERS' MEETING

um
2026

VOLTA product update Data-governed MDO, future app ecosystem and the journey to AI implementation

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VOLTA Product Manager

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Head of Design

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The current landscape in digital engineering

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- Engineering simulation is at an inflection point
- AI/ML is the primary disruption vector
- The stack is fragmenting and specializing
- Democratization is moving from vision to reality
- Physics-based simulation remains critical, but augmented by AI
- Master the full stack: compute, data, models and workflow integration

Source: What's the Endgame for Engineering Simulation? | McKinsey & Company

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AI is here: Vertical AI Readiness in Engineering

Vertical Integration (Single-Domain)

Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
Manual Engineering	**AI-Assisted Engineering**	**AI-Supported Decision Making**	**Semi Autonomous Engineering**	**Autonomous Task Execution**	**Autonomous AI-Engineering**
No AI involvement	AI assists specific subtasks	AI supports specific decision making	AI automates development subtasks	AI takes over complete domain tasks	AI carries out domain processes autonomously
Domain processes performed manually without AI	AI provides basic suggestions information, engineers integrate	AI provides additional information, engineers utilize	AI provides multiple solutions, engineers select and refine	AI provides optimized solutions, engineers refine	AI provides E2E solution, engineers approve

Source: AI in New Product Development | Accenture, German Research Center for Artificial Intelligence GmbH (DFKI), Fraunhofer ISST

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AI is here: Horizontal AI Readiness in Engineering

Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
Manual Engineering	**AI-Assisted Engineering**	**AI-Supported Decision Making**	**Semi Autonomous Engineering**	**Autonomous Task Execution**	**Autonomous AI-Engineering**
No AI involvement	AI assists data linking	AI recommends data linking and development activities	AI automates data linking and create specific artifacts	AI links and generates specific data across domains	AI links data across domains autonomously
Cross-domain development is managed fully manual	Affected data is partially highlighted, engineers assess impacts	Affected data is fully highlighted, engineers refine data linking	Affected data is automatically linked, engineers decide on (automated) data creation	Affected data is automatically linked, engineers supervise impact and data generation	Affected data is linked in real-time, engineers supervise E2E development

Horizon Integration
(Cross-Domain)

Source: AI in New Product Development | Accenture, German Research Center for Artificial Intelligence GmbH (DFKI), Fraunhofer ISST

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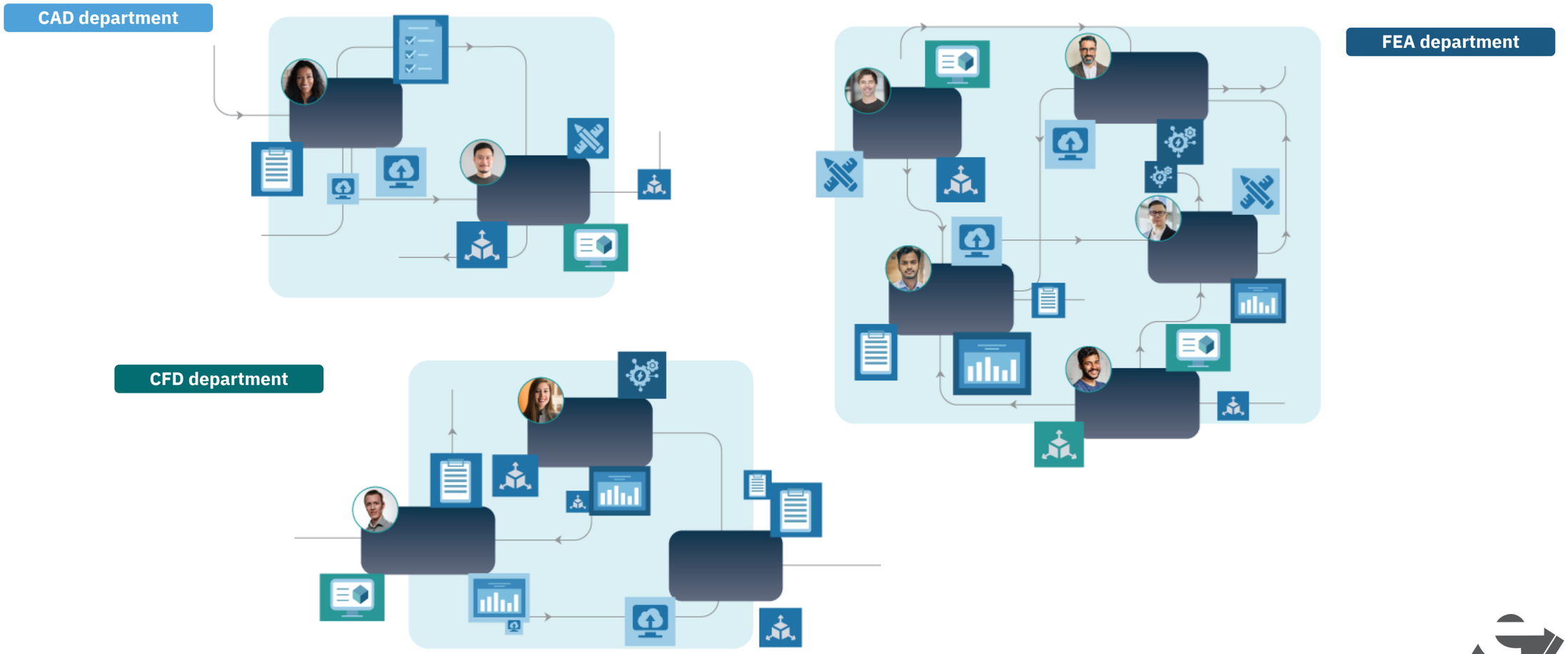
Is your data ready for AI in engineering?

Engineers hold simulation knowledge, not data.



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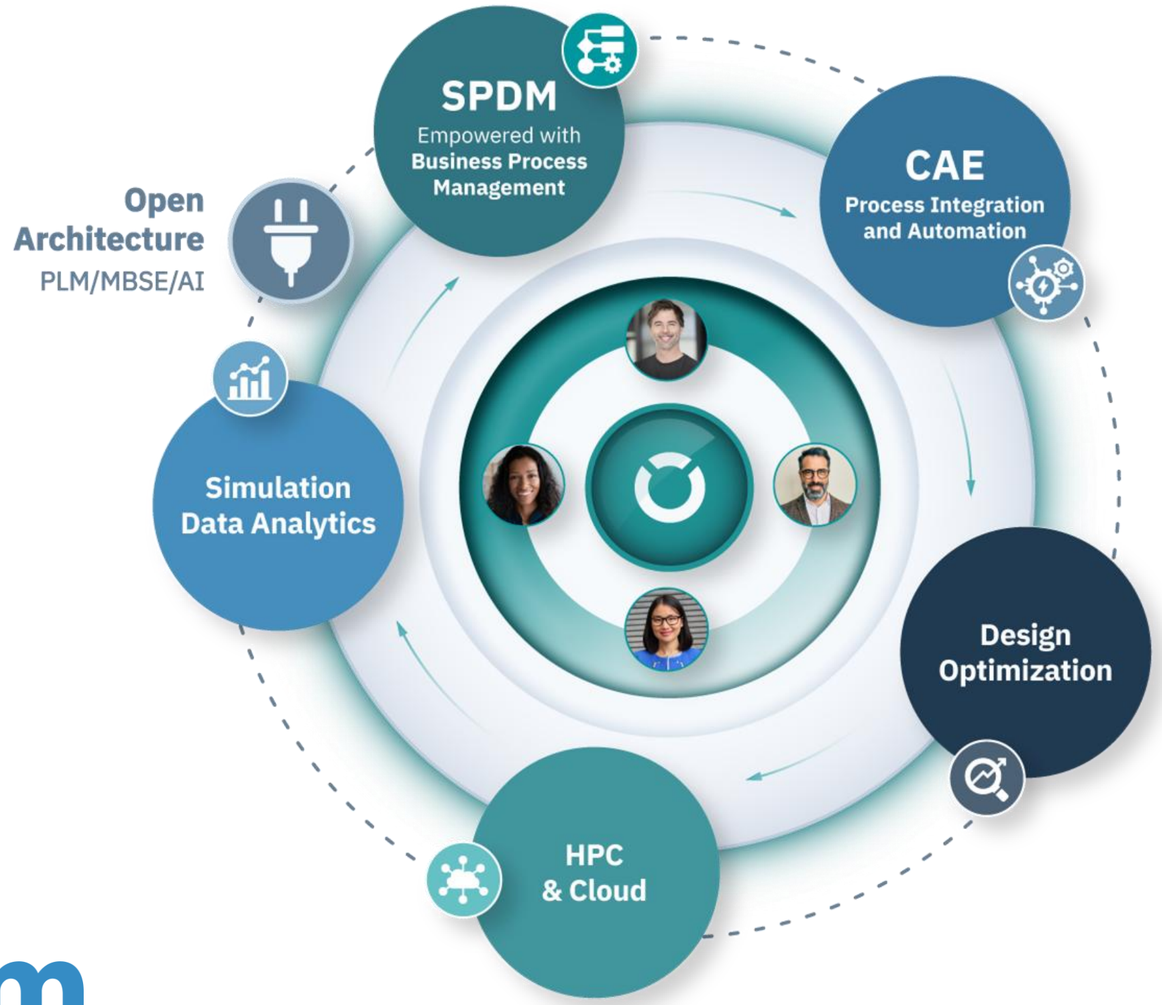
VOLTA digital engineering platform



Transform simulation knowledge into an organizational asset and the bedrock for AI adoption in engineering.

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Data-governed collaborative MDO

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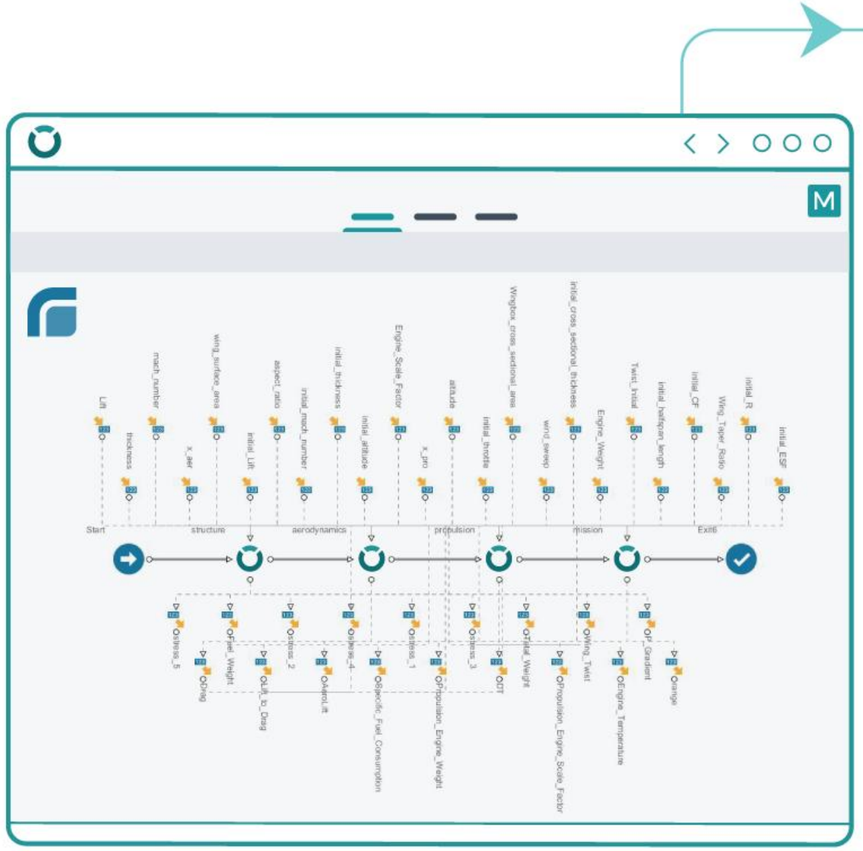
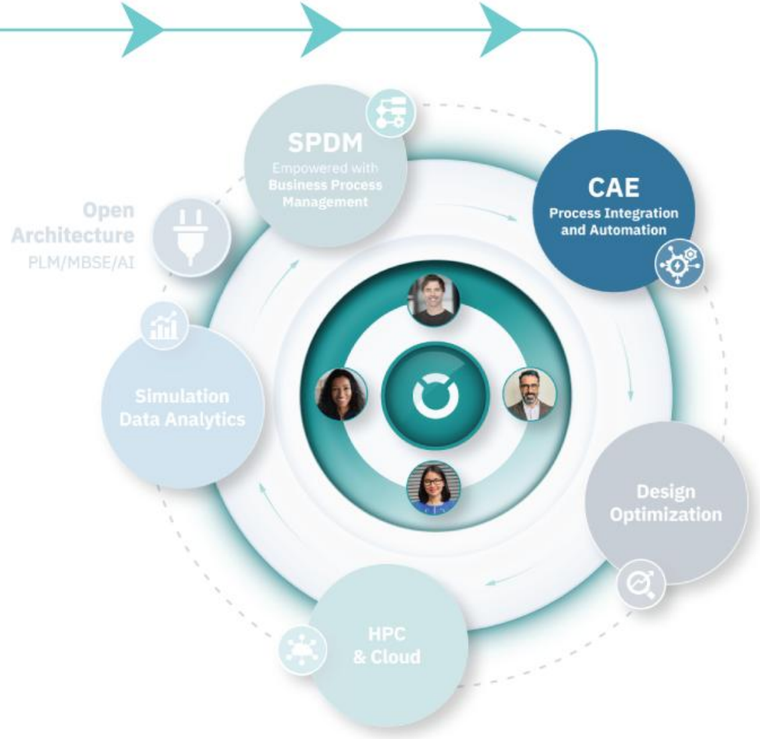
Simulation workflow automation





- Connect tools, parameters, and execution steps.
- Automate the process and record what was run.
- modeFRONTIER users do this every day.

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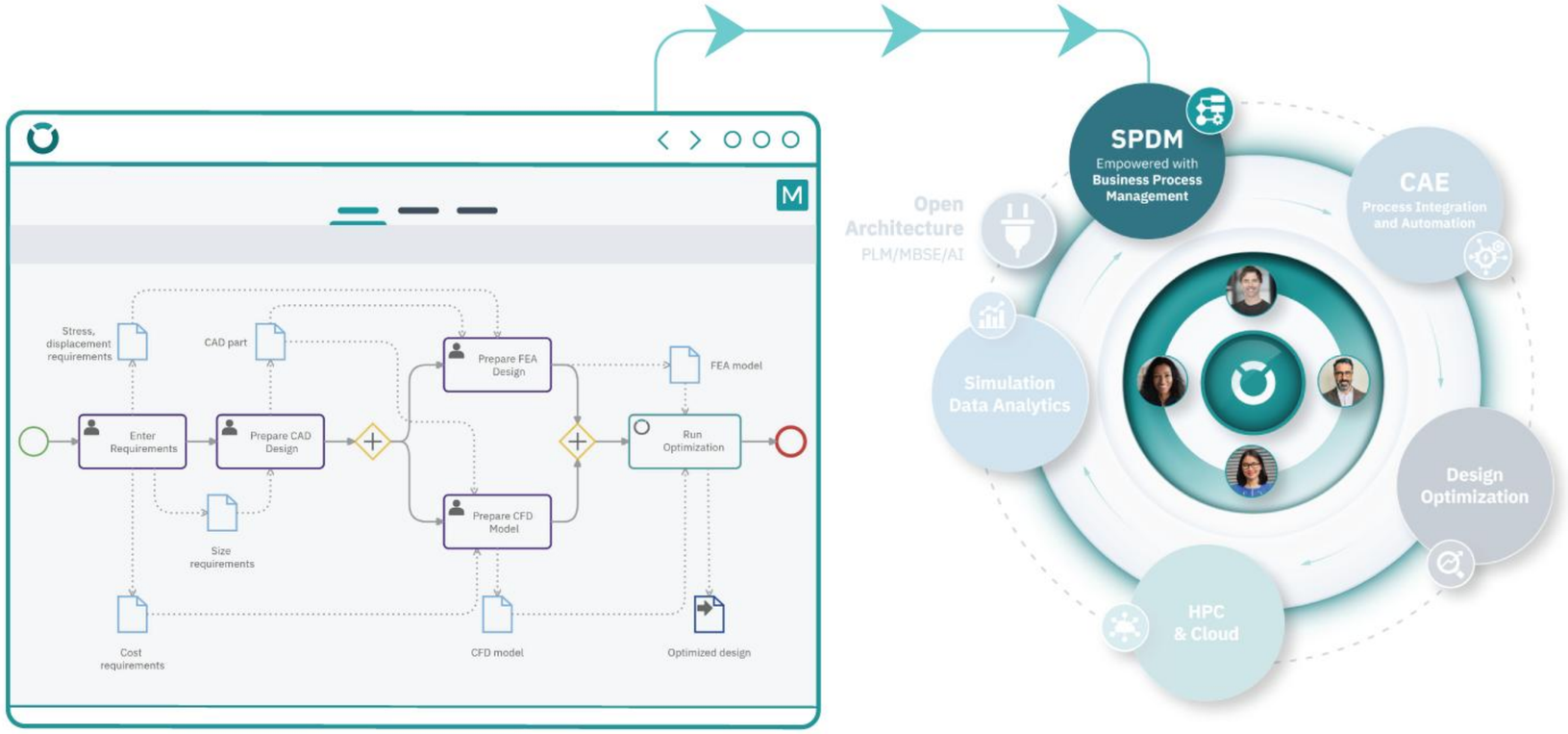
Business process workflow automation



- BPMN 2.0: the standard for modeling and executing business processes
- Connect people, decisions, and simulation workflows in a single executable model
- Who does what, when, triggered by what, approved by whom
- BPMN process integrates the simulation workflow runs

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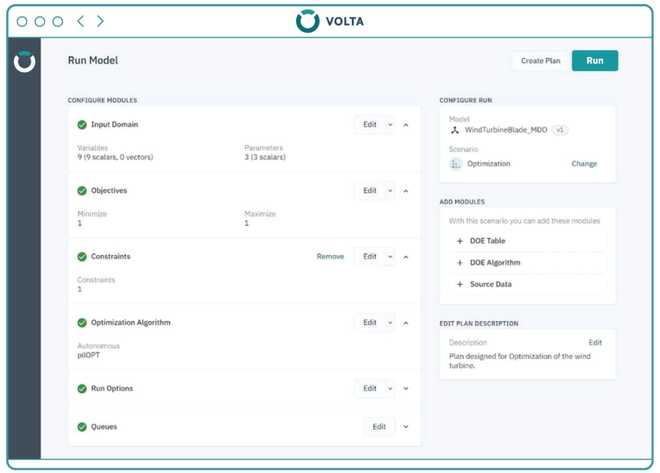
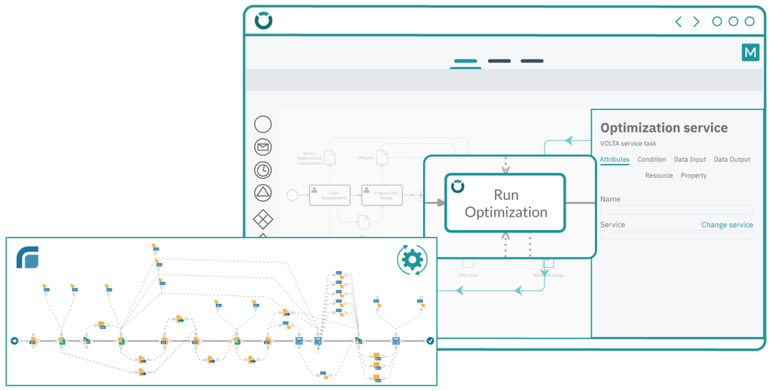
Simulation models execution in VOLTA



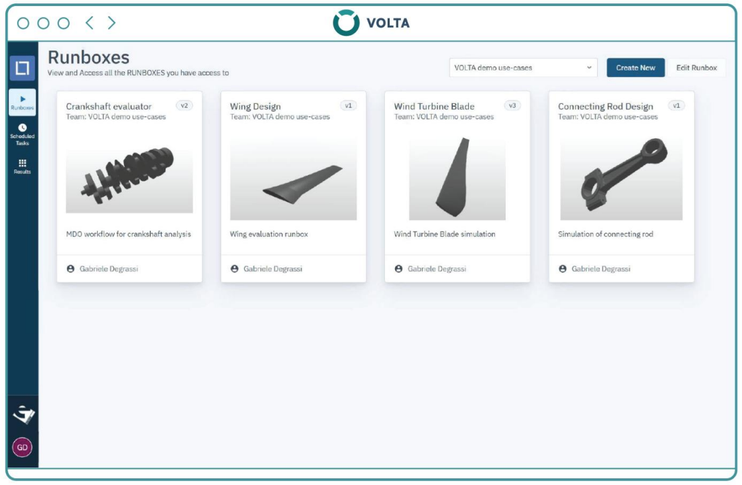
Planner

Simulation experts configure an execution (single run, DOE, or design optimization).



VOLTA Service task

Invoke the execution of a simulation run configuration task from business process workflow.



Runbox

API-based web apps creation for non-simulation experts.

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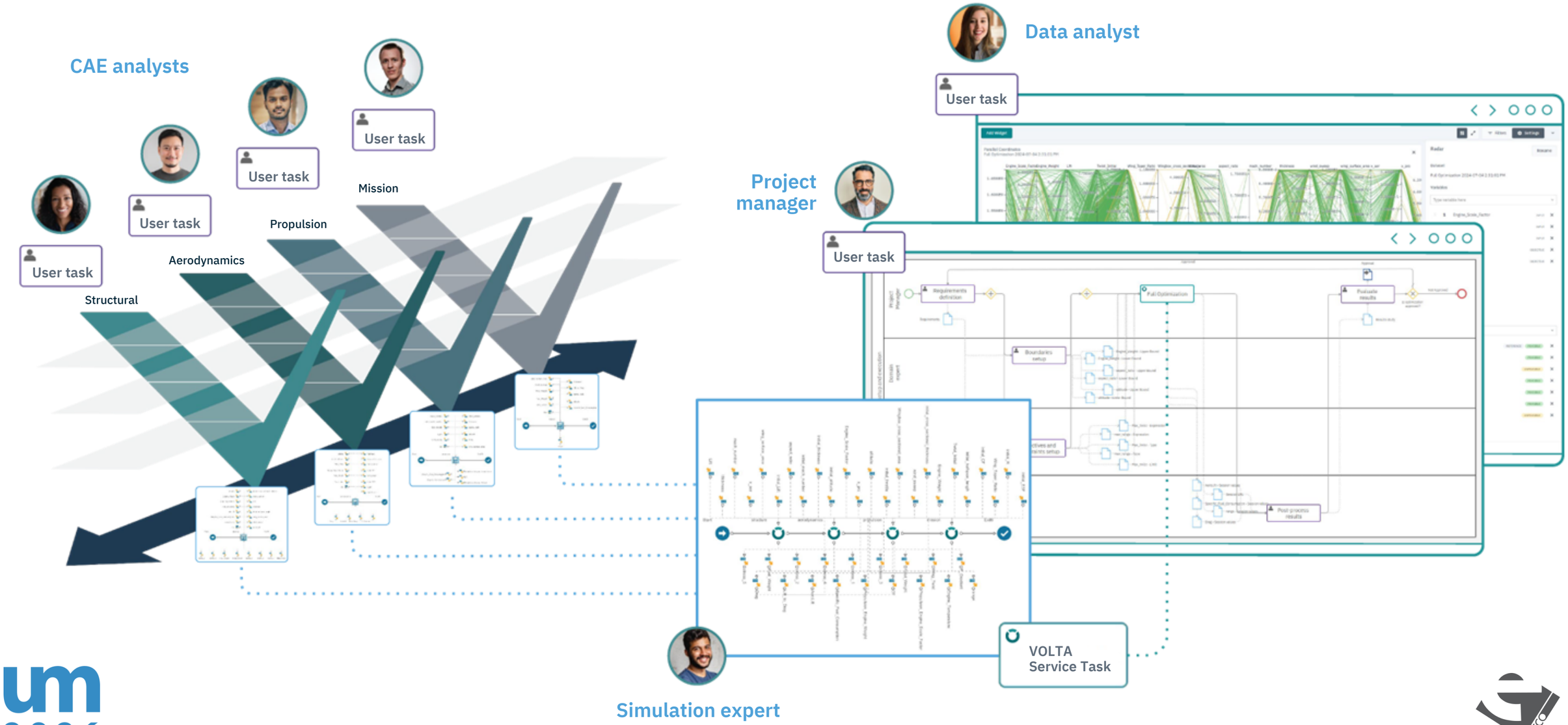
Every simulation run leaves a complete trace



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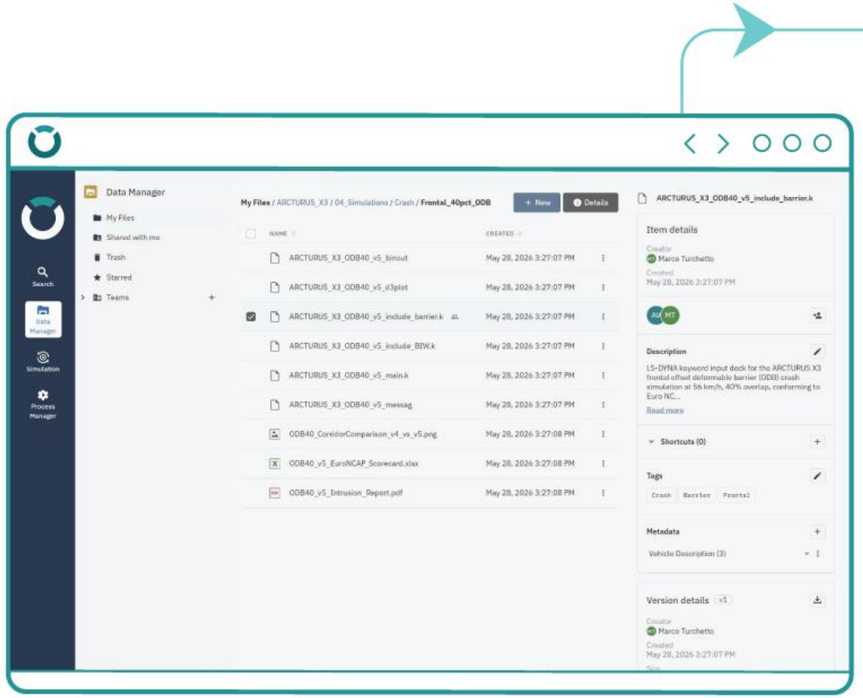
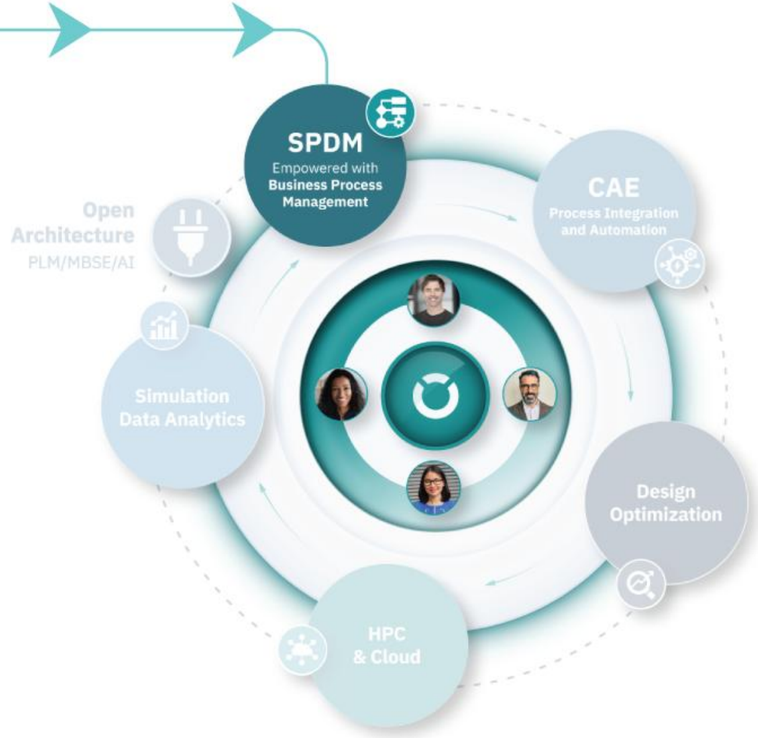
Simulation Data Manager





- All simulation files, models, datasets organized in one place
- Versioning, full-text search, tags
- Know what is inside a file
- Shared across your team, traceable back to the process that produced it

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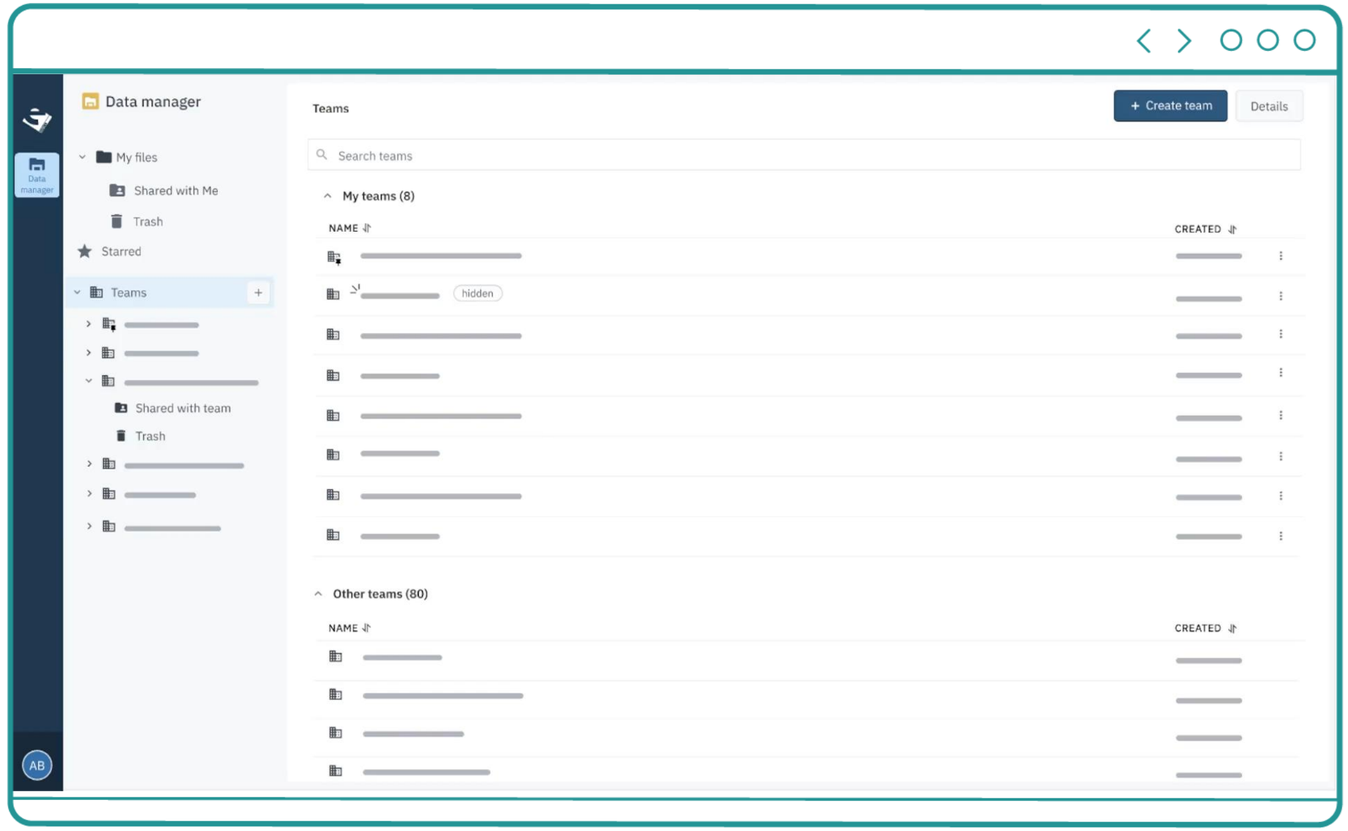
Collaborative MDO among Teams in Data Manager



Coming in 2026...

- Share data across people and groups
- Role-based access: the right people see the right data
- Simulation results belong to the organization
- Data Manager Improved Teams: open collaboration at enterprise scale

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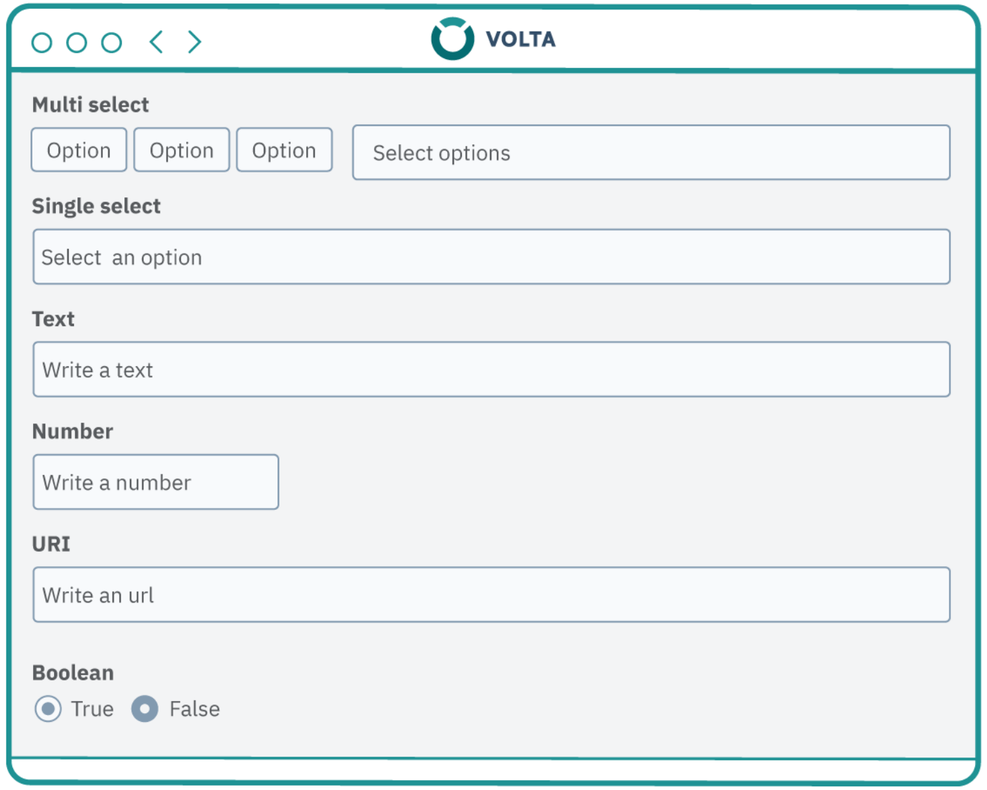
Enhanced metadata - Preview



Coming in 2026...

- Describe what is inside every simulation artifact
- Templates that enforce consistency across the team
- Mandatory fields that ensure nothing is left undescribed
- Metadata governance across files, sessions, processes and teams
- A human can query it. An AI agent can query it. The data speaks for itself.

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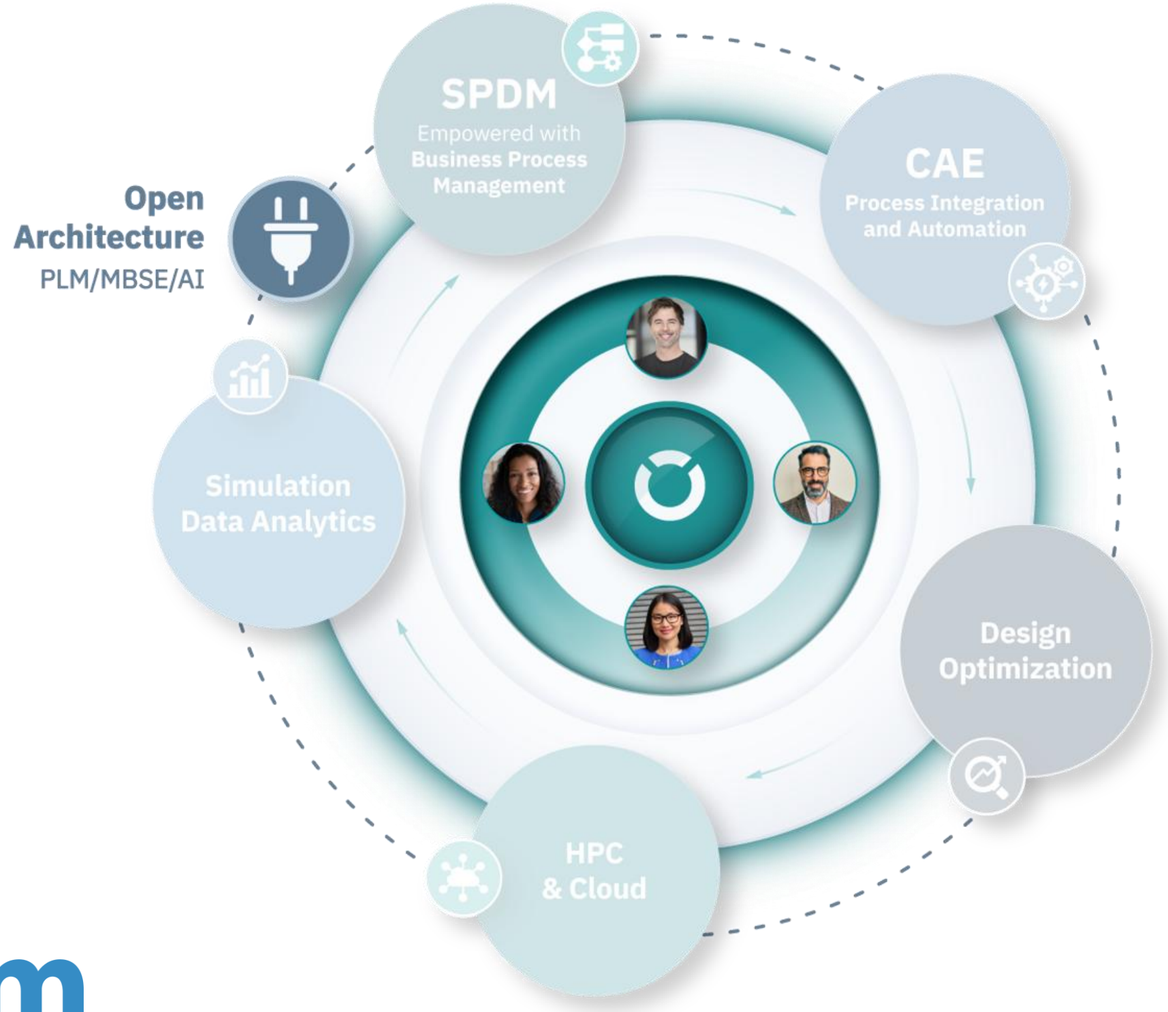
Open architecture



Connect simulation to the digital thread of product data with VOLTA Application Programming Interfaces (APIs).

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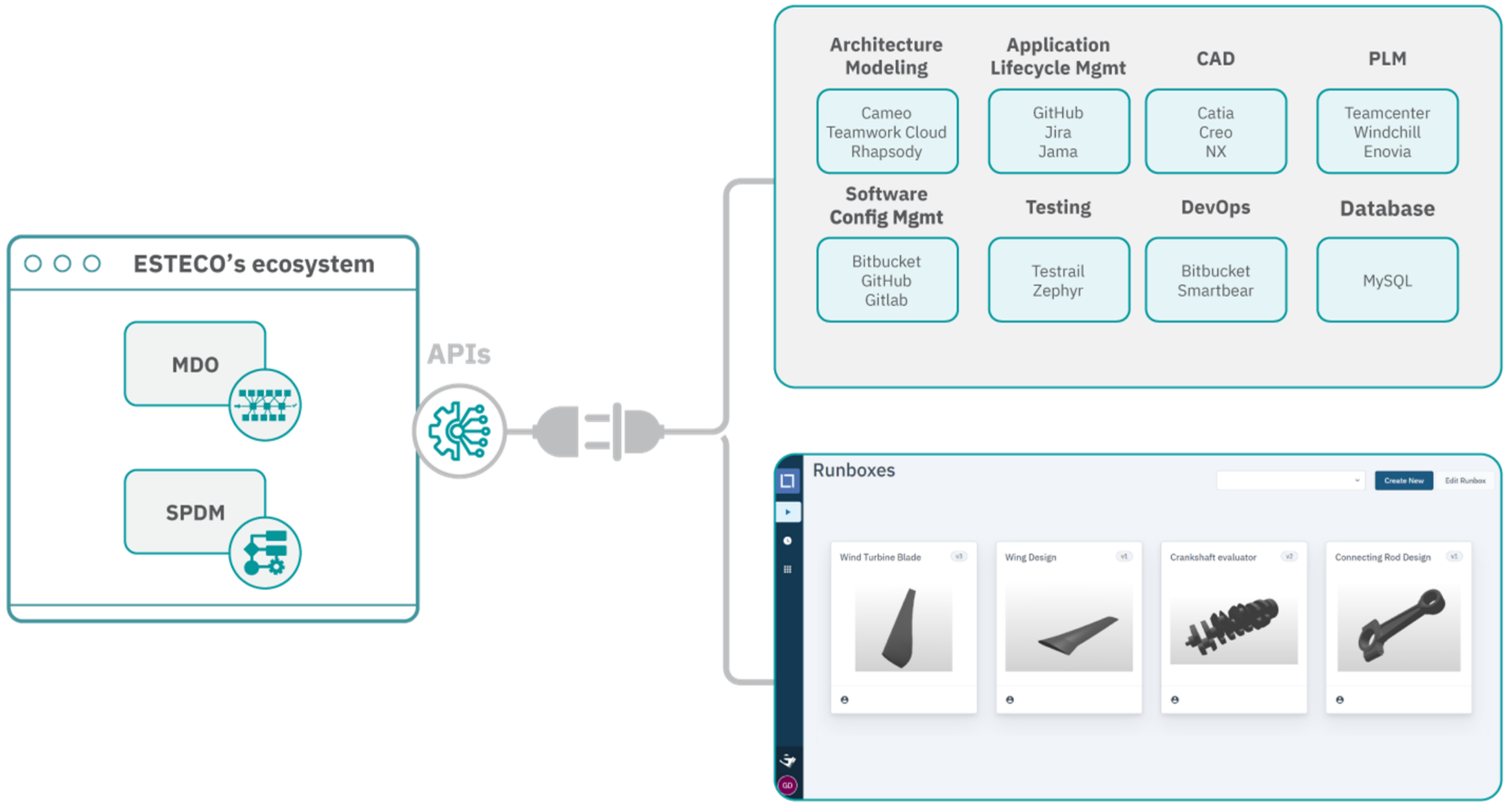
Interoperability with other enterprise systems



- Connect simulation to the digital thread of product data with rest APIs
- Integrate SPDM and MDO with PLM and MBSE environments
- API based web apps creation for non-simulation experts to run design space exploration studies

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External data sources connector

- Connect PLM and SPDM systems to VOLTA: manage design, simulation and optimization processes
- External data connectors to preserve authoritative data sources
- Link CAD (stored in PLM) and CAE models (stored in SPDM) into an automated simulation workflow
- Execute automated traceable CAD/CAE workflows for design exploration and optimization studies

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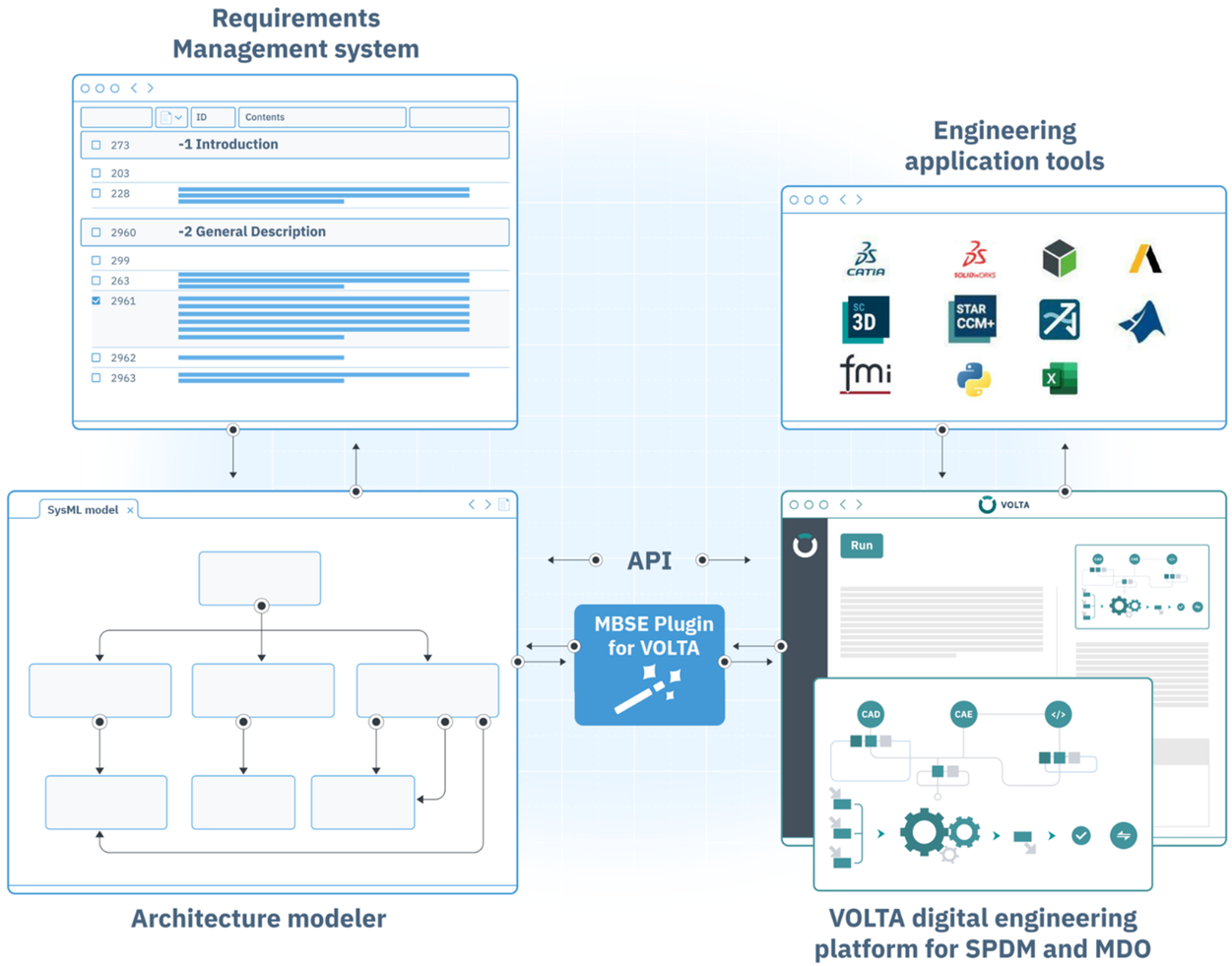
MBSE plugin for VOLTA



- Link requirements to simulation configurations for verification
- Aggregate simulation results in Cameo for visual feedback
- Trace simulation results to model and process configurations for reproducibility
- Impose requirements as constraints on exploration or design optimization studies

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Future apps ecosystem

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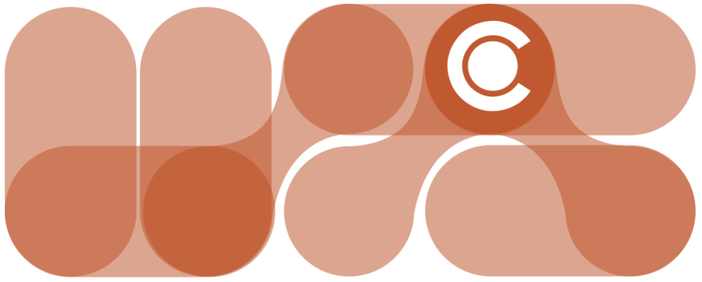

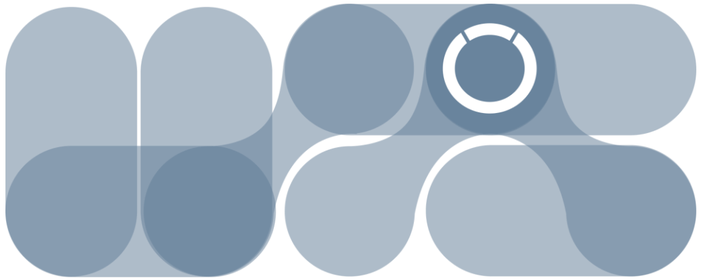


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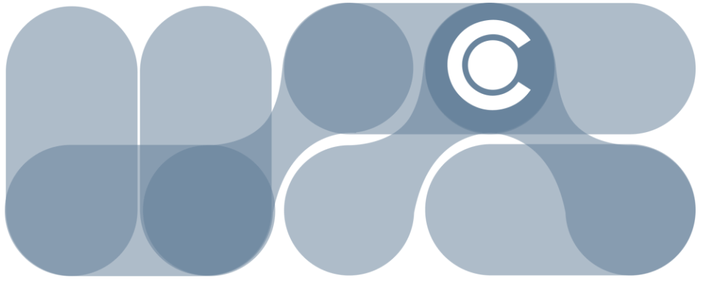

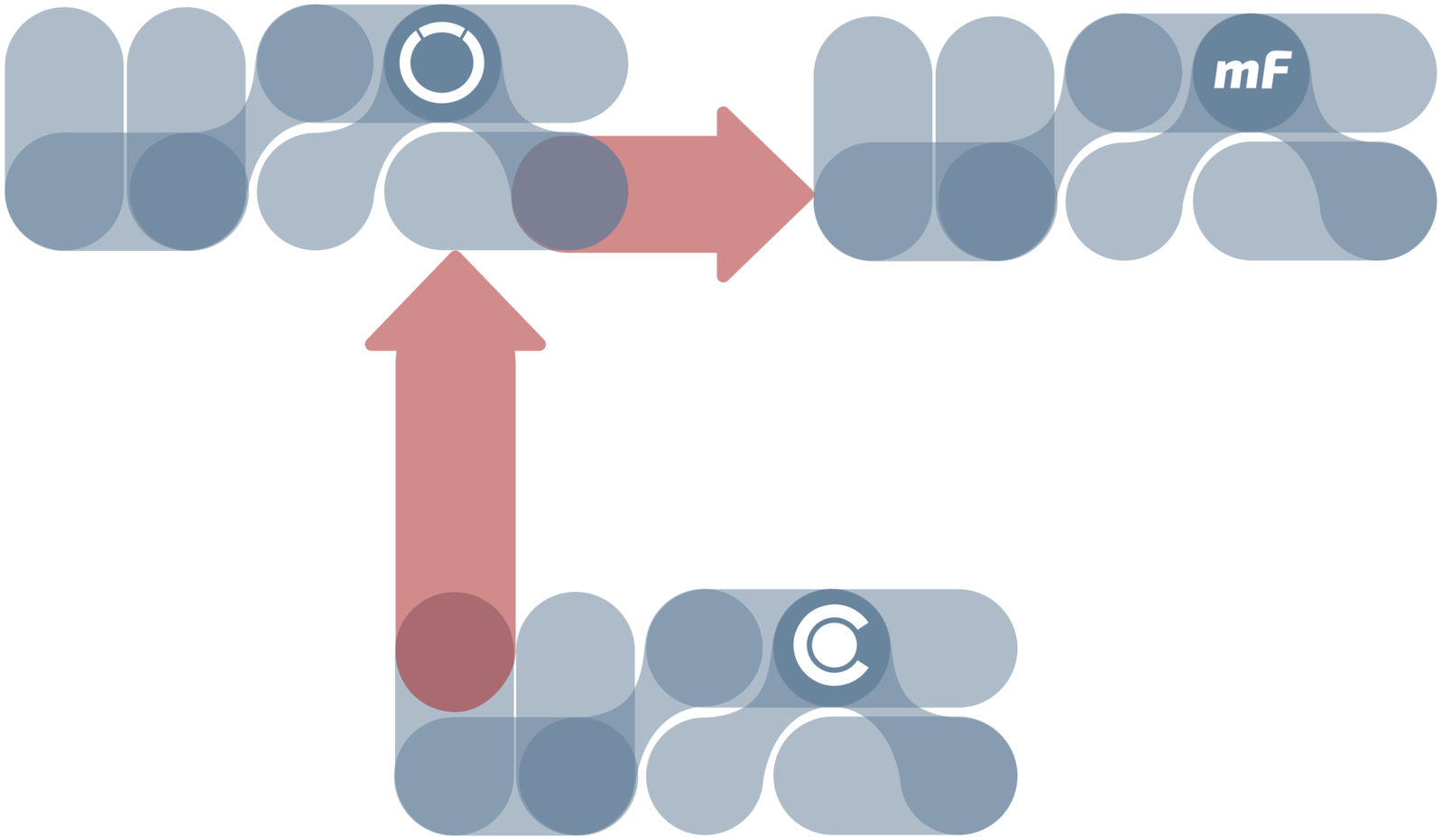
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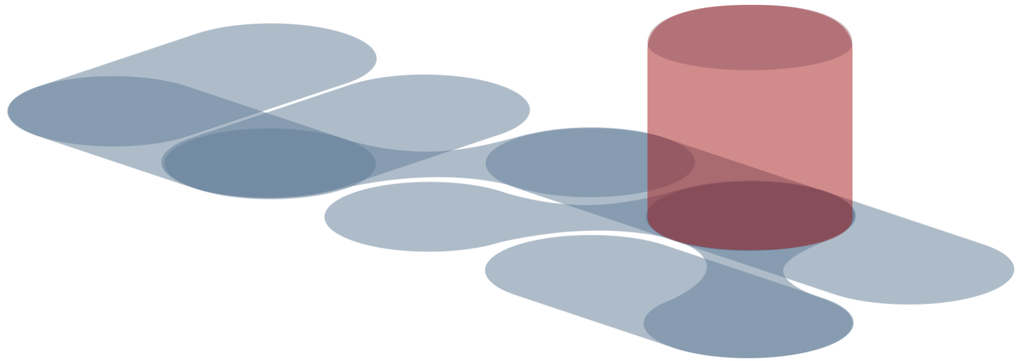
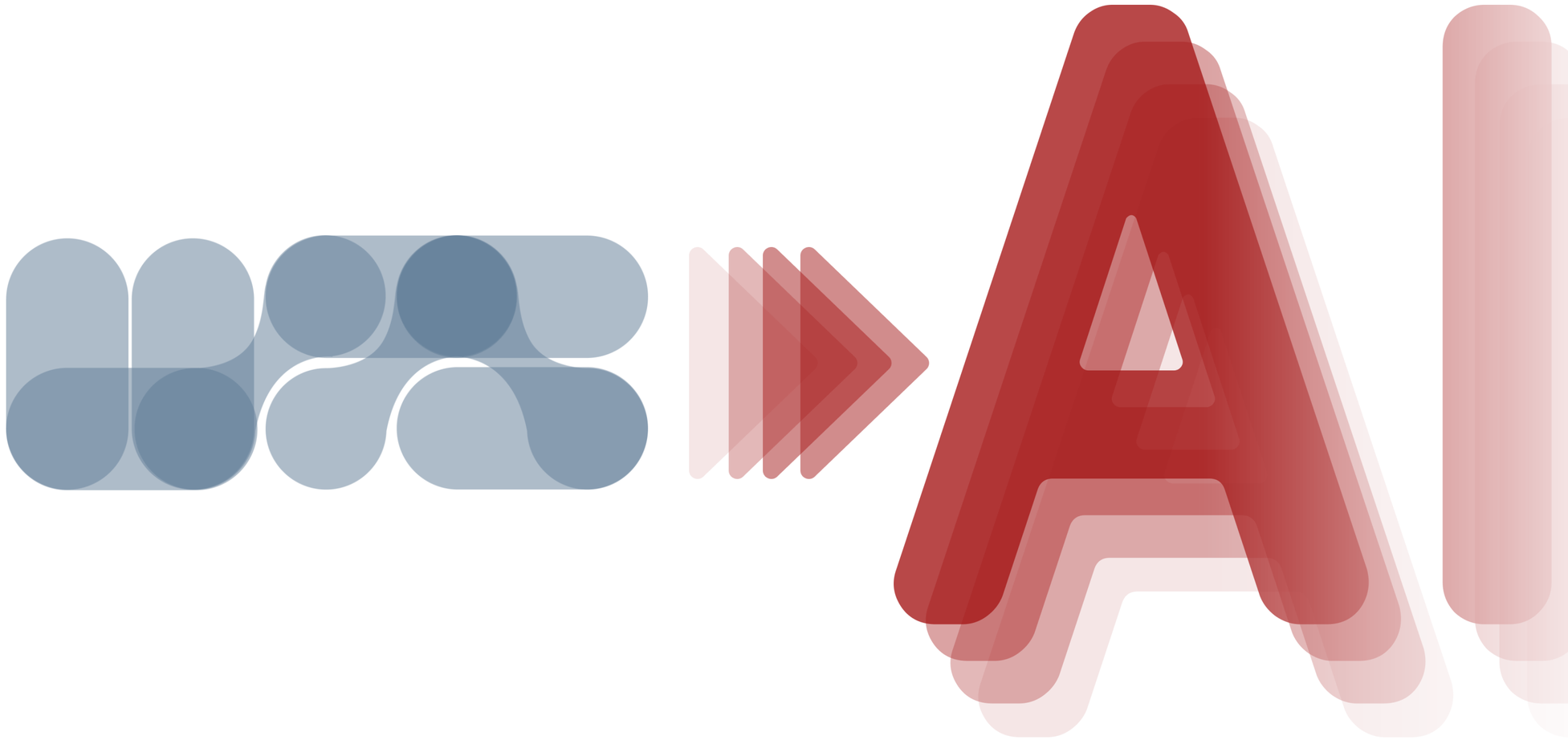
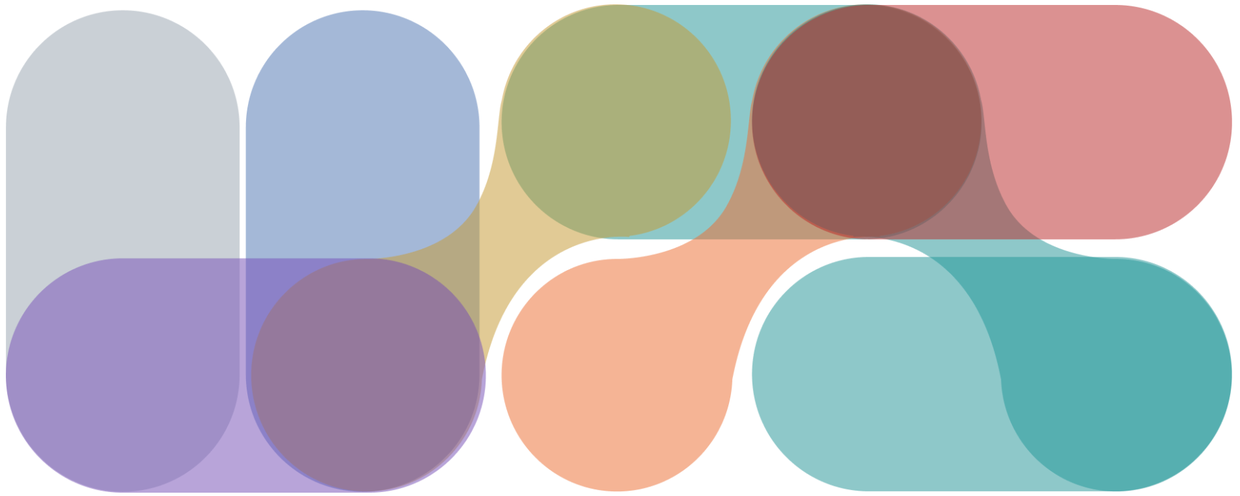
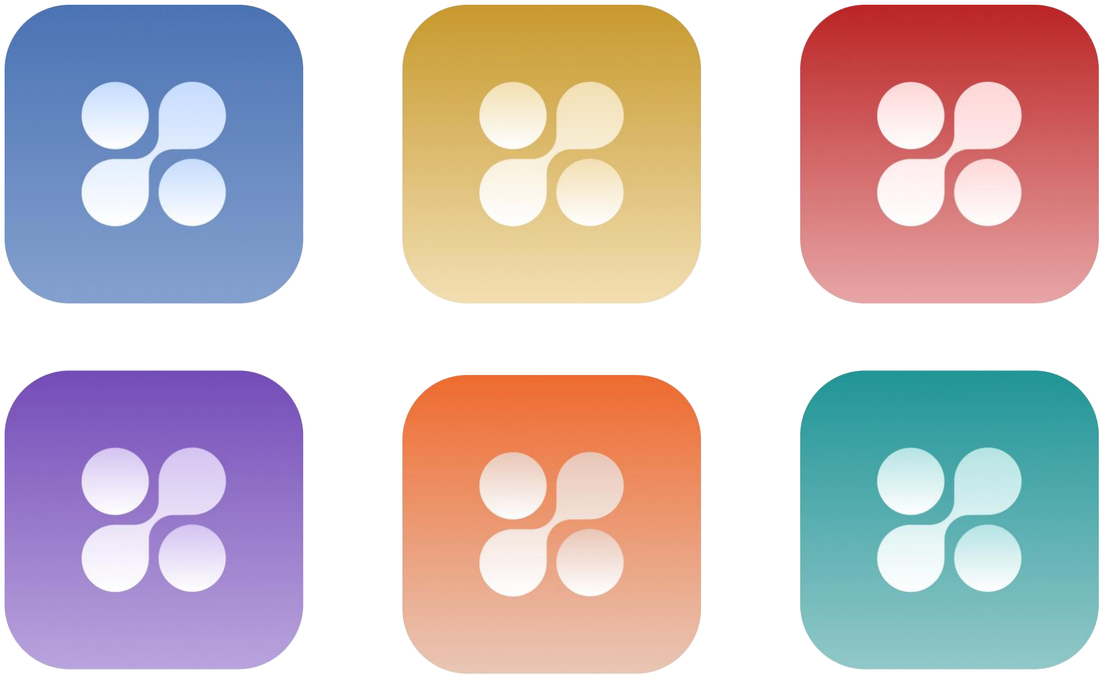
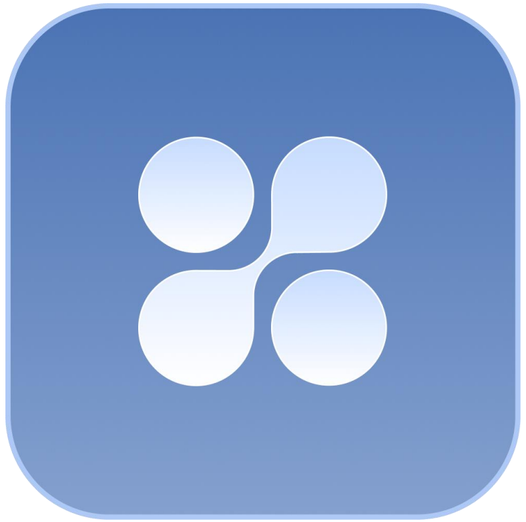
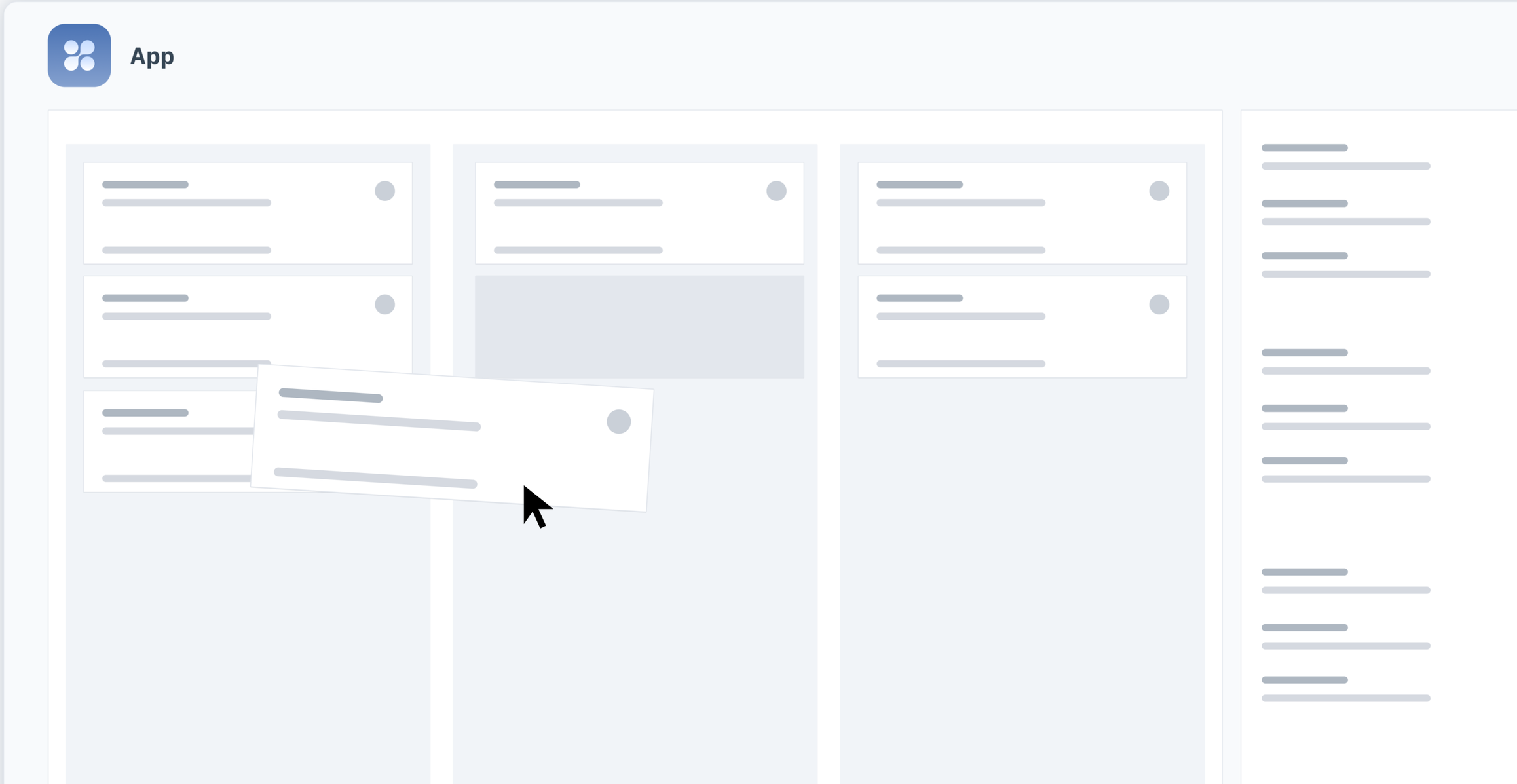






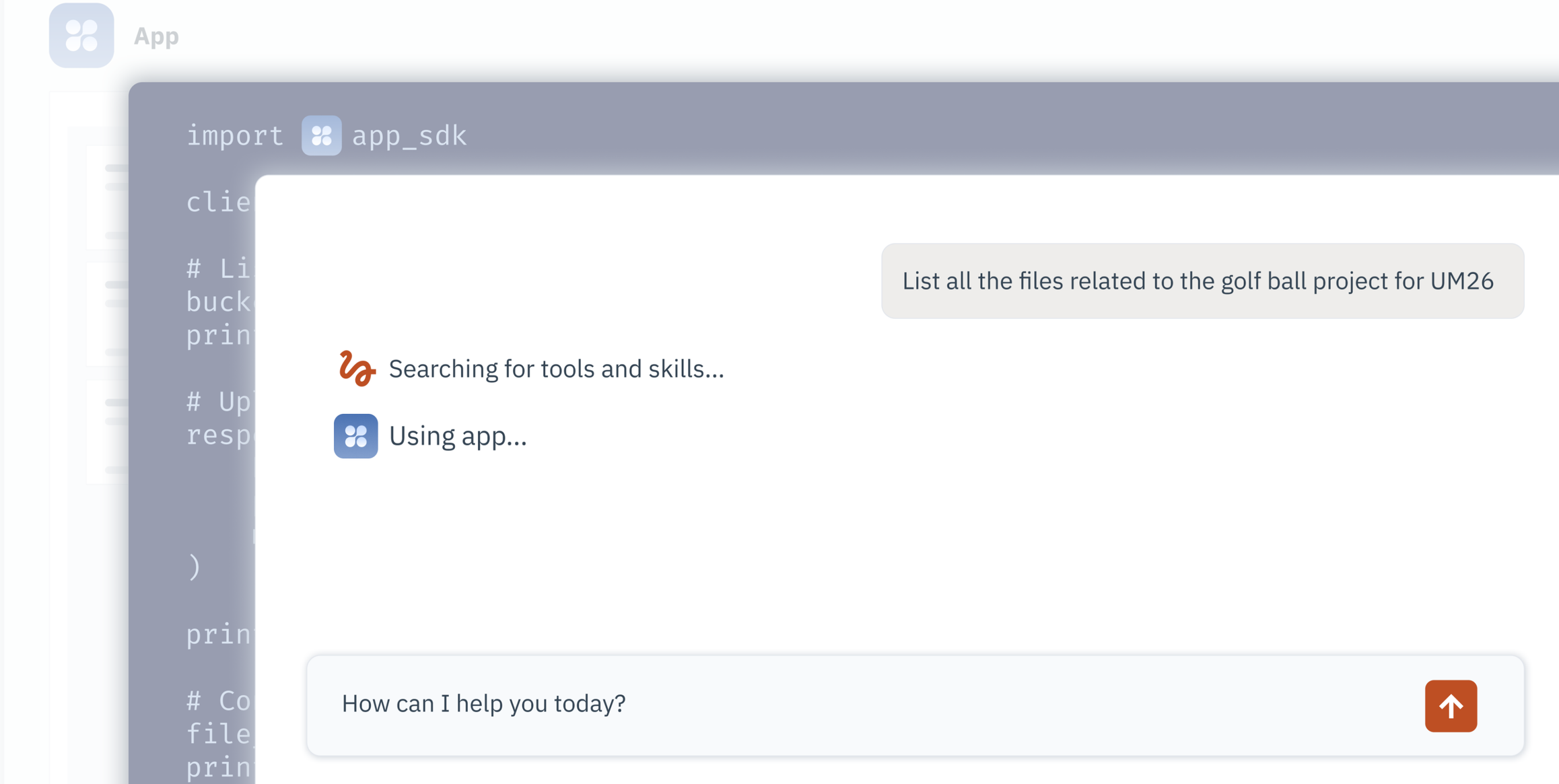


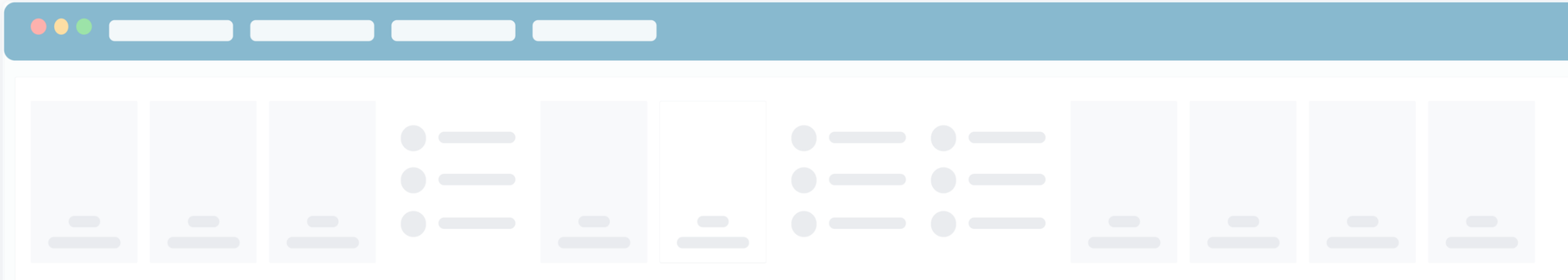



App

App

```
import app_sdk

client = app_sdk.Client(api_key=API_KEY, timeout=30)

# List available buckets
buckets = client.storage.list_buckets()
print(f"Found {len(buckets)} buckets")

# Upload file to storage bucket
response = client.storage.upload(
bucket="project-assets",
path="/exports/report_final.pdf",
metadata={"owner": "team-alpha", "tag": "Q2"}
)

print(response.file_id) # f_8a3dc21e9b

# Confirm upload and fetch file info
file_info = client.storage.get(response.file_id)
print(f"Uploaded: {file_info.name} ({file_info.size_kb} KB)")

# Move file to archive bucket
client.storage.move(
file_id=response.file_id,
destination_bucket="project-archive"
)
```

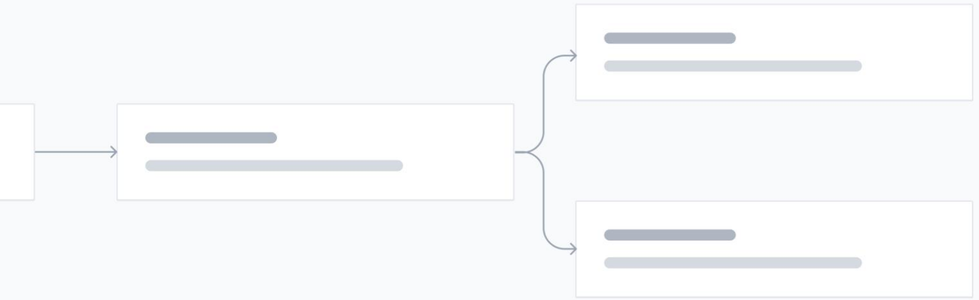

App
import app_sdk
clie
Li
buck
prin
Up
resp
)
prin
Co
file
prin
List all the files related to the golf ball project for UM26
Searching for tools and skills...
Using app...
How can I help you today?



Understand and fix

1. **Mesh failure** on `wing_tip` (negative Jacobian): tighten input variable bounds or add a mesh quality pre-check.
2. **CFD timeout** on design #6: increase the `CFD_Solver` timeout above 300s.
3. **Post-processor crash** (`extract_forces.py`): check Python environment compatibility.
4. **License server** briefly unreachable: verify designs #51-#53 outputs are valid.

```
[2026-05-30 08:14:07.655] [INFO ] Design #2 dispatched (PID 18423)
[2026-05-30 08:14:07.656] [INFO ] Design #3 dispatched (PID 18424)
[2026-05-30 08:14:07.657] [INFO ] Design #4 dispatched (PID 18425)
[2026-05-30 08:14:31.002] [INFO ] Design #1 completed successfully - Cd=0.0213, Cl=0.874
[2026-05-30 08:14:31.003] [INFO ] Design #5 dispatched (PID 18441)
[2026-05-30 08:14:44.891] [ERROR] Design #3 failed - exit code 1 from node 'CFD_Solver'
[2026-05-30 08:14:44.892] [ERROR] Subprocess stderr: FATAL: mesh generation failed on surface patch 'wing_tip' - negative Jacobian detected
[2026-05-30 08:14:44.893] [WARN ] Design #3 marked as FAILED and excluded from optimization
[2026-05-30 08:15:02.110] [INFO ] Design #2 completed successfully - Cd=0.0241, Cl=0.891
[2026-05-30 08:15:18.774] [ERROR] Design #6 failed - timeout exceeded (300s) on node 'CFD_Solver'
[2026-05-30 08:15:18.775] [ERROR] Process PID 18448 forcibly terminated after timeout
[2026-05-30 08:15:18.776] [WARN ] Timeout threshold may be too low for this mesh resolution - consider increasing CFD_Solver timeout
[2026-05-30 08:16:04.330] [INFO ] Design #4 completed successfully - Cd=0.0198, Cl=0.862
[2026-05-30 08:16:05.001] [INFO ] DOE progress: 4/80 completed, 2 failed, 74 pending
[2026-05-30 08:22:11.559] [ERROR] Design #14 failed - node 'Post_Processor' returned non-zero exit code 139
[2026-05-30 08:22:11.560] [ERROR] Segmentation fault in external script: /scripts/extract_forces.py - check Python environment compatibility
[2026-05-30 08:22:11.561] [WARN ] Output file 'forces_014.dat' not found - output node will report missing values
[2026-05-30 08:22:11.562] [WARN ] Objective Cd for design #14 set to NaN - design excluded from Pareto front
[2026-05-30 08:31:47.003] [INFO ] DOE phase completed - 72/80 designs successful, 8 failed
```



From the full-body external aerodynamics solution, extract the pressure coefficient (Cp) field on the front bumper and hood surfaces only. Clip the geometry at the A-pillar and compute the area-weighted average Cp per zone (bumper lower, bumper upper, hood leading edge, hood center). Flag any region with Cp < -1.8 as potential separation risk. Export to VTK.

Creating the preprocessing workflow...

How can I help you?

Simulate and compare 2 golf balls with different diameters: 3cm and 2.7cm.

Searching for tools and skills...

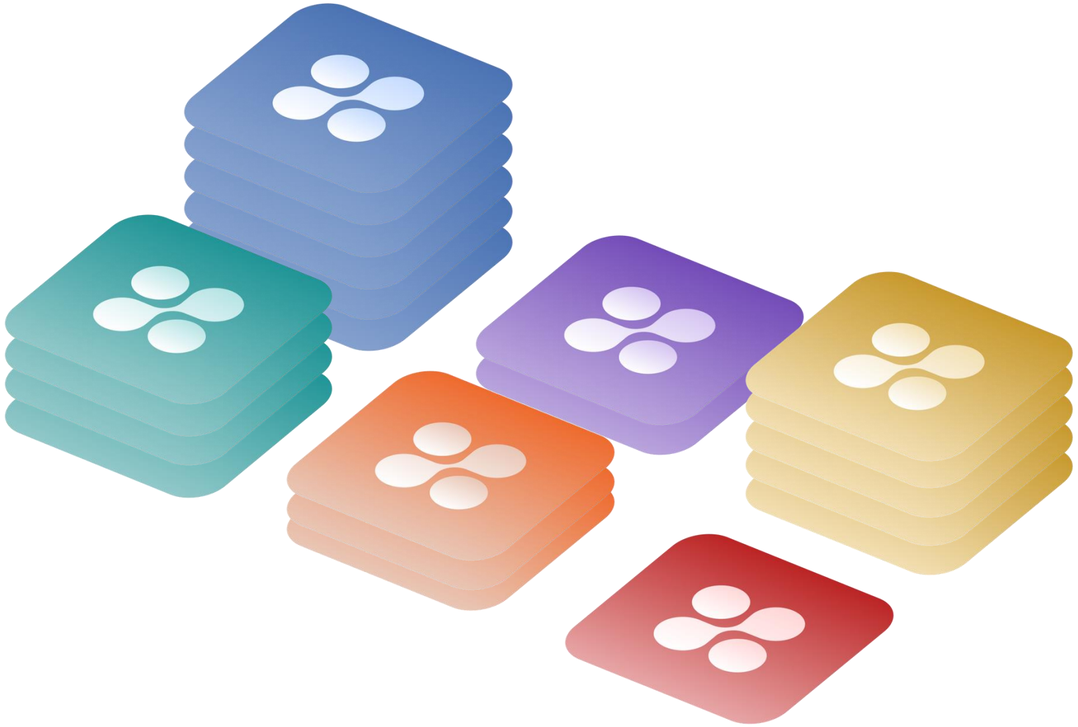
Retrieving files for simulating a golf ball...

Running 2 simulations...

Creating a dashboard to compare result...

How can I help you today?


mF



Blog post

One visual language, one connected experience: Presenting ESTECO's new product logos

Written by Matteo Miotto and Carla Ferro
9 June 2026

One visual language, one connected experience: Presenting ESTECO's new product logos

Today, we're proud to unveil a new set of product logos and app icons that redefine the branding of the ESTECO software portfolio. This isn't just a change in graphics; it's a visual declaration of how our technology has evolved and a signal of the connected ecosystem we're building.

modeFRONTIER VOLTA

modeFRONTIER

VOLTA

Cardanit

nDAI

modeFRONTIER

VOLTA

Cardanit

nDAI

Account

Admin

License Manager

Hub

Dataset

Advisor

Simulation analysis

Data Manager

Project

Player

BPMN Modeler

DMN Modeler

Process Manager

Task Manager

nD Modeler

API

pyConsole

pyFRONTIER

Runbox

Account

Admin

License Manager

Hub

Dataset

Advisor

Simulation analysis

Data Manager

Project

Player

BPMN Modeler

DMN Modeler

Process Manager

Task Manager

Mimic

nD Modeler

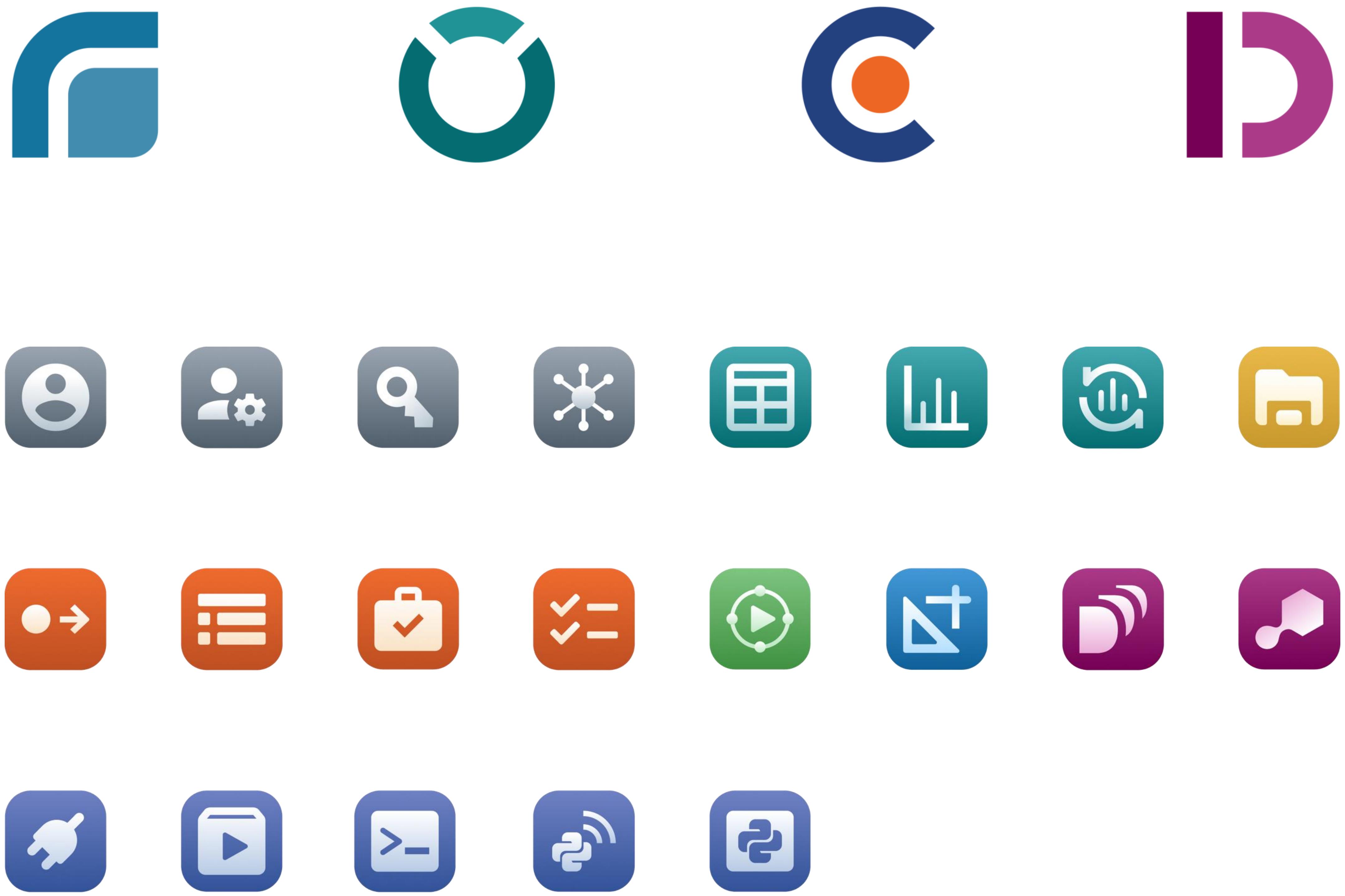
API

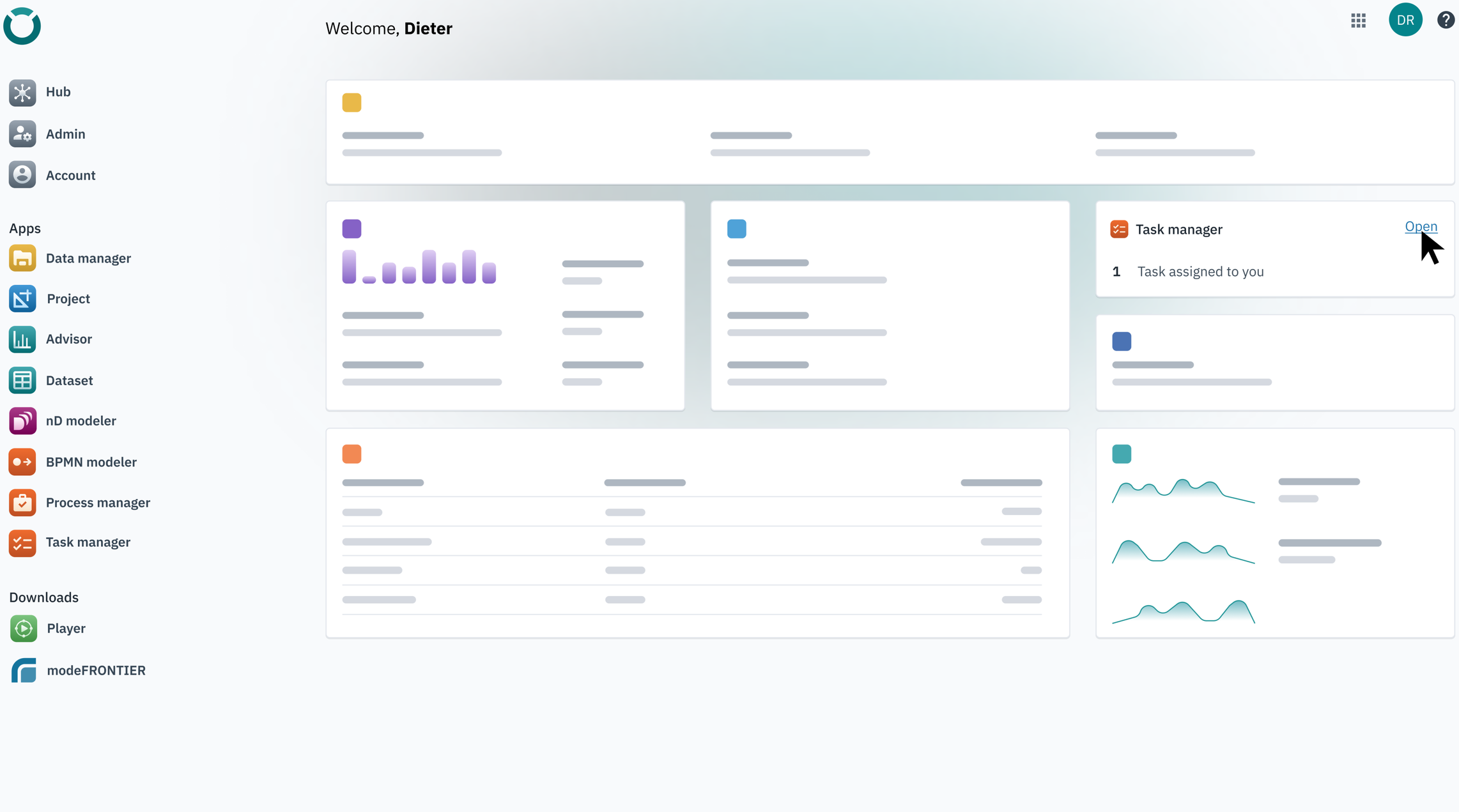
pyConsole

pyFRONTIER

Runbox

Connector Studio




Welcome, **Dieter**
DR
Hub
Admin
Account
Apps
Data manager
Project
Advisor
Dataset
nD modeler
BPMN modeler
Process manager
Task manager
Downloads
Player
modeFRONTIER
Task manager
Open
1 Task assigned to you

Hub

Admin

Account

Apps

Data manager

Project

Advisor

Dataset

nD modeler

BPMN modeler

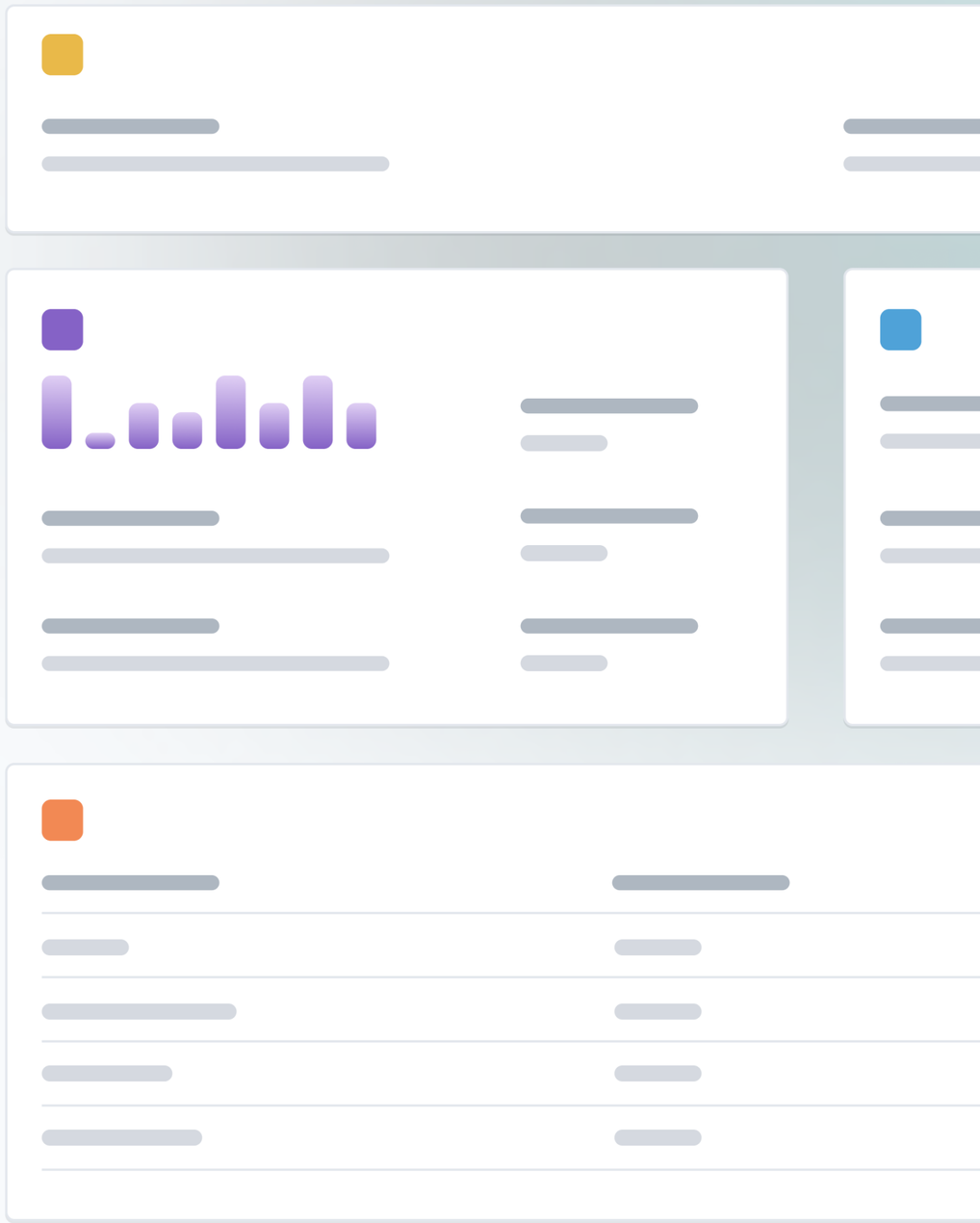
Process manager

Task manager

Downloads

Player

modeFRONTIER



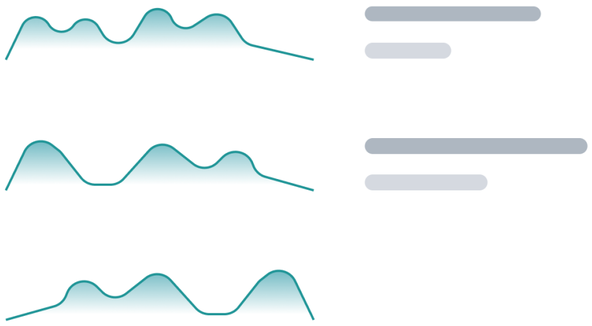
Welcome, **Dieter**

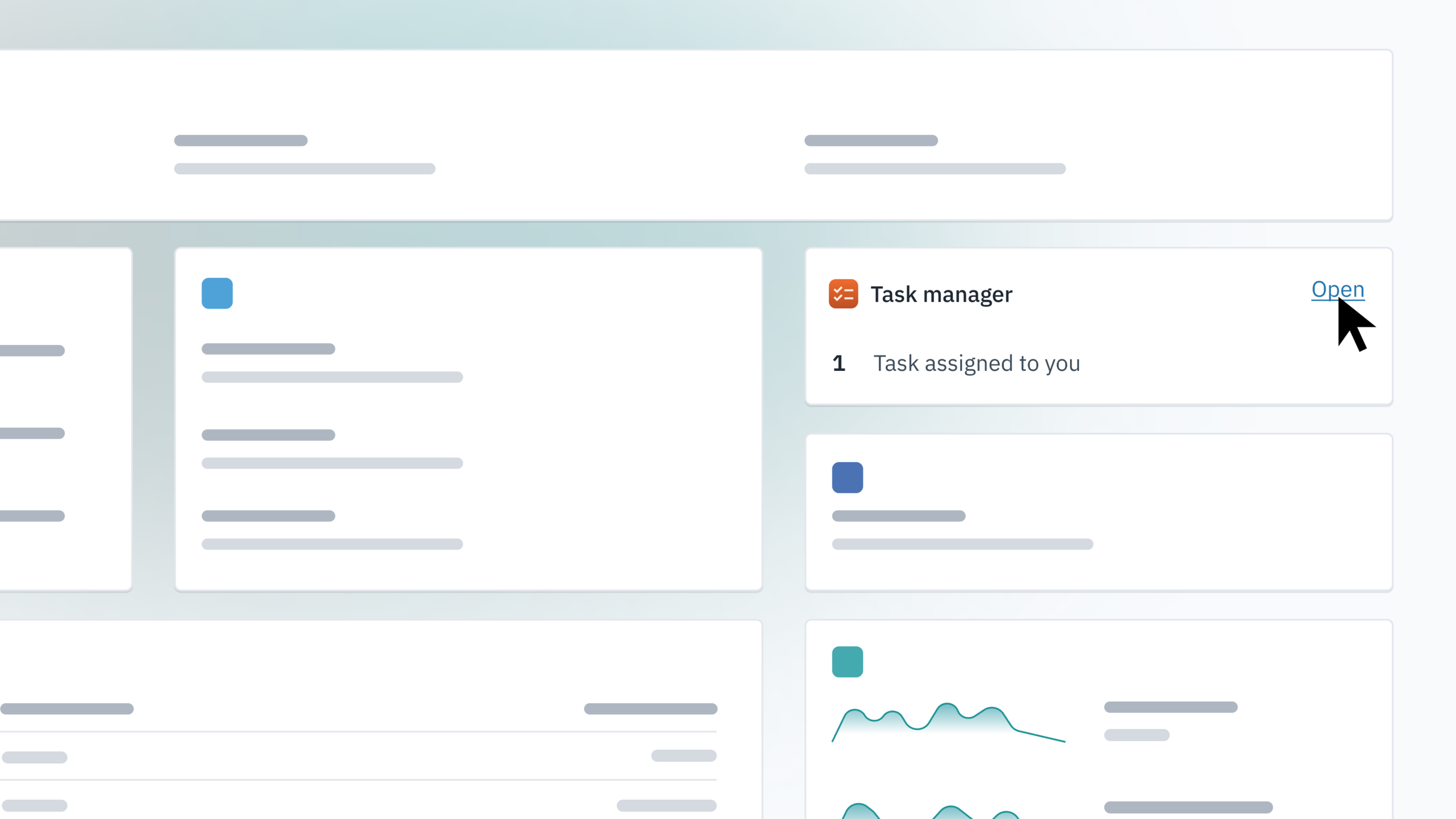
DR

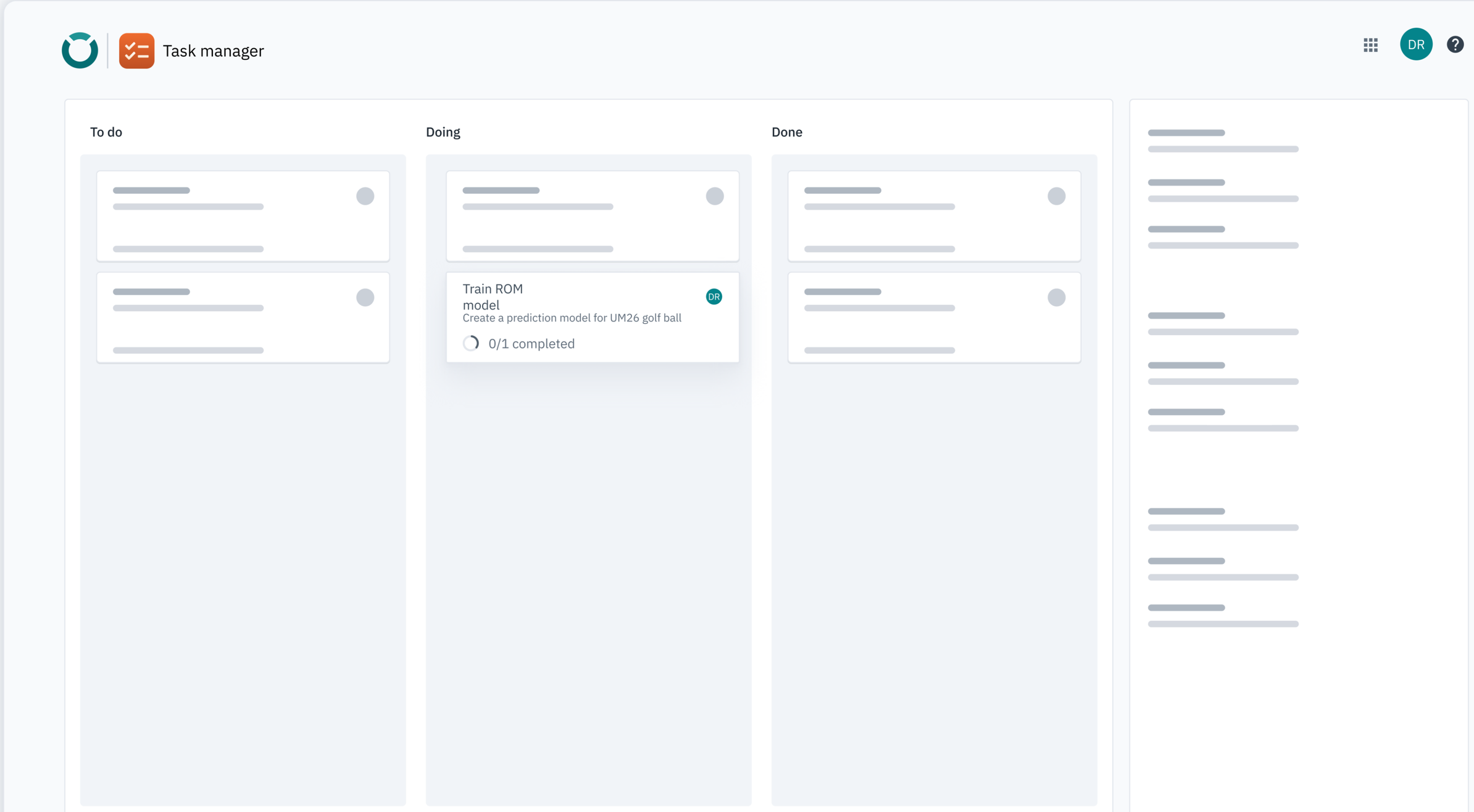
Task manager

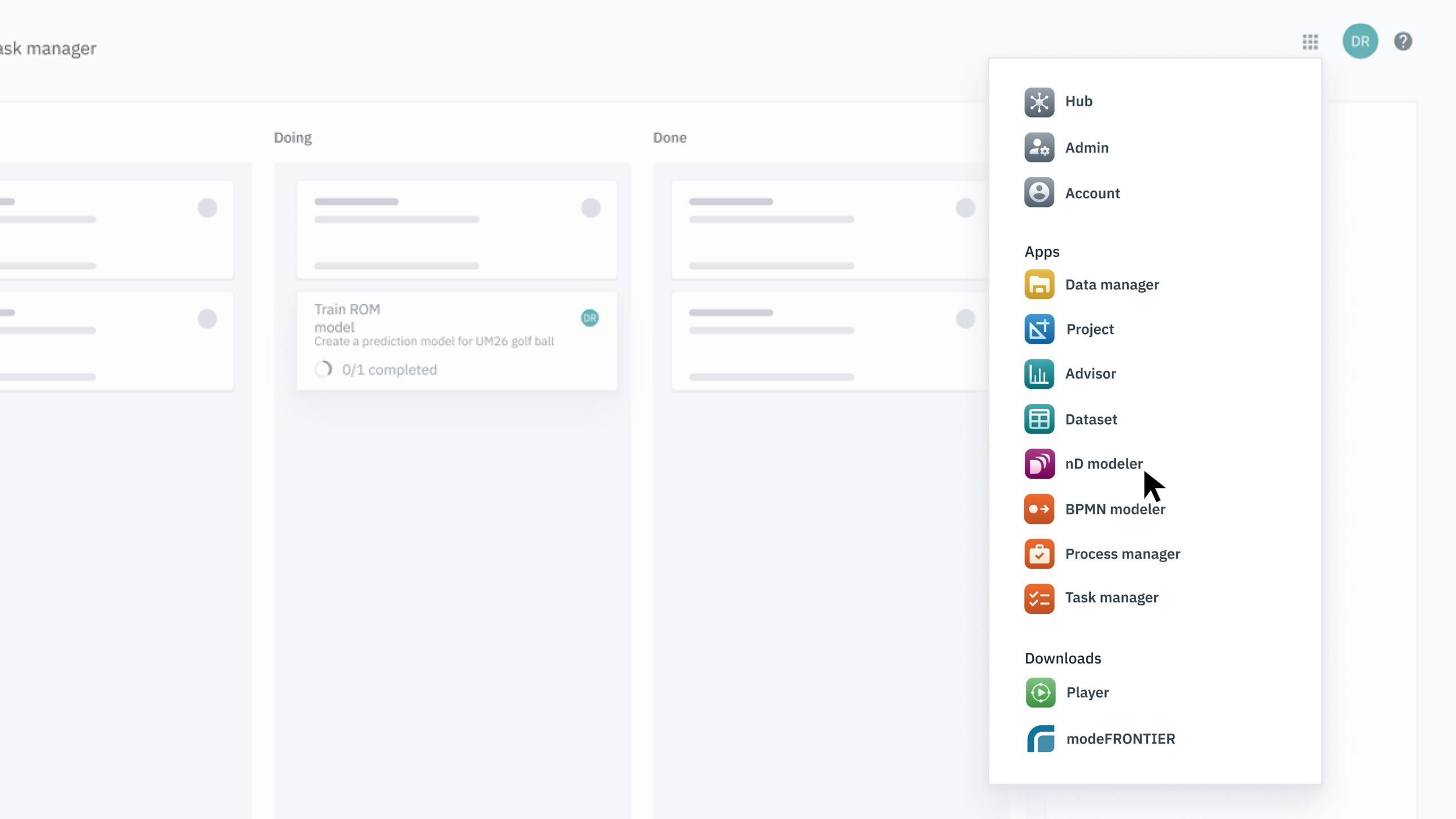
Open

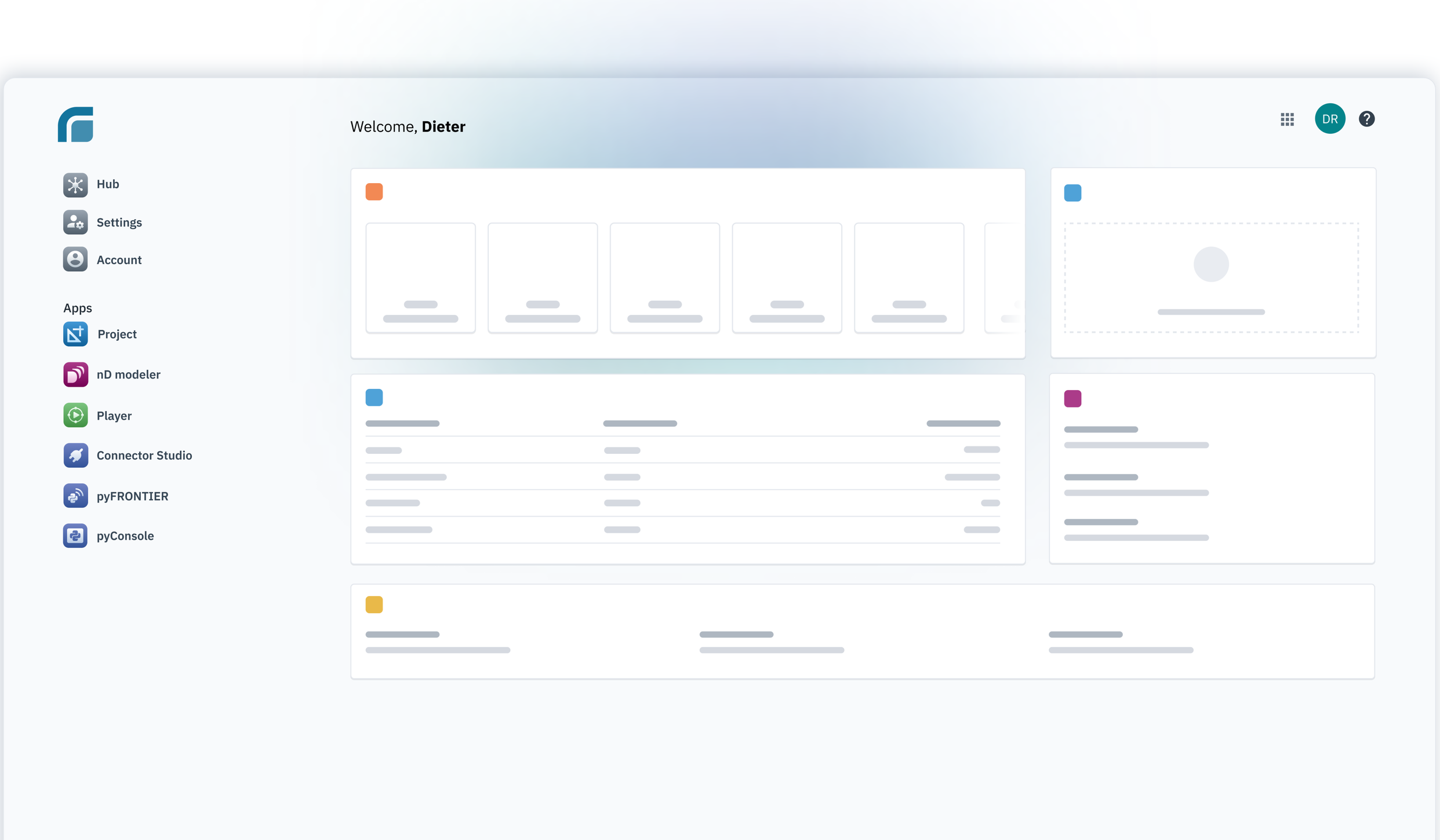
1 Task assigned to you




Task manager
Open
1
Task assigned to you


Task manager
DR
To do
Doing
Done
Train ROM model
Create a prediction model for UM26 golf ball
DR
0/1 completed


ask manager
DR
Doing
Done
Train ROM
model
Create a prediction model for UM26 golf ball
DR
0/1 completed
Hub
Admin
Account
Apps
Data manager
Project
Advisor
Dataset
nD modeler
BPMN modeler
Process manager
Task manager
Downloads
Player
modeFRONTIER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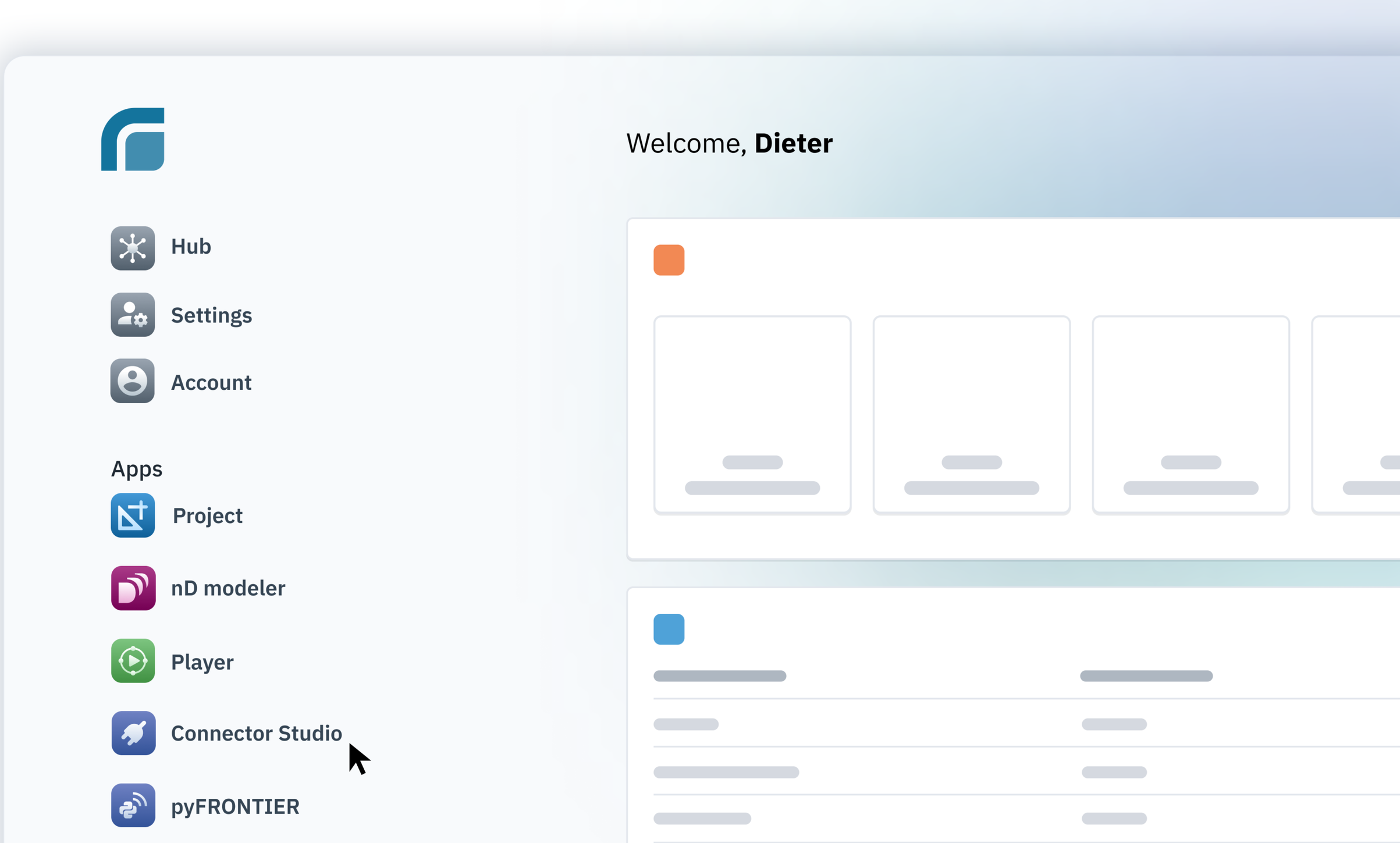
Project
nD modeler
Player
Connector Studio
pyFRONTIER
pyConsole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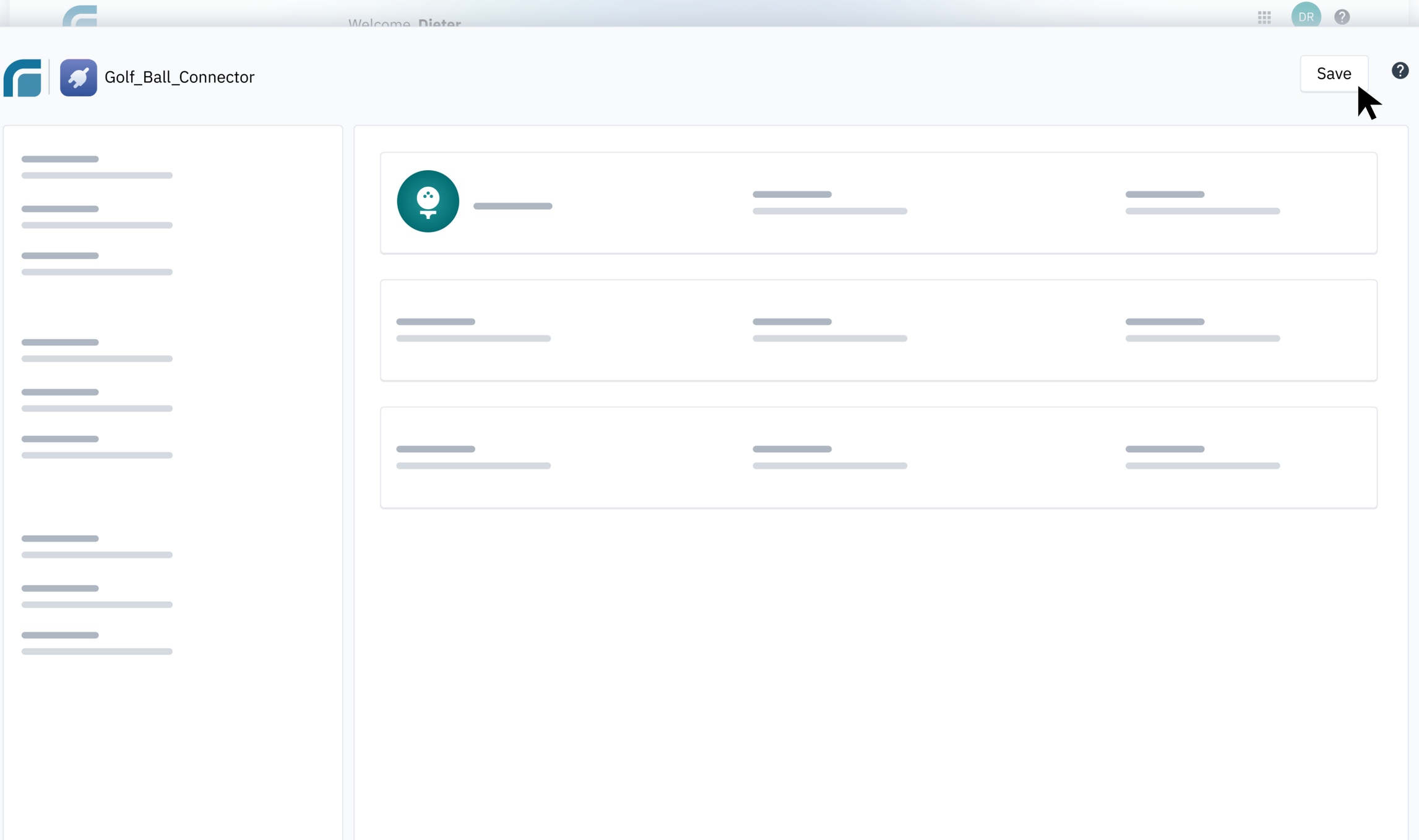
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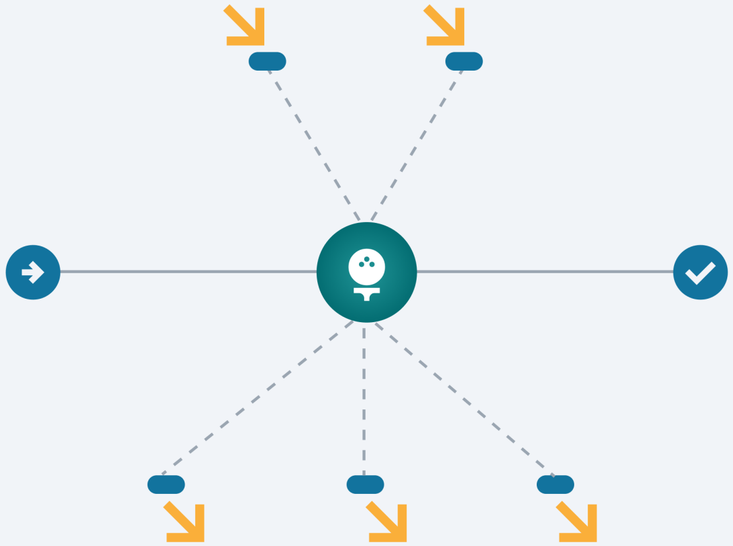
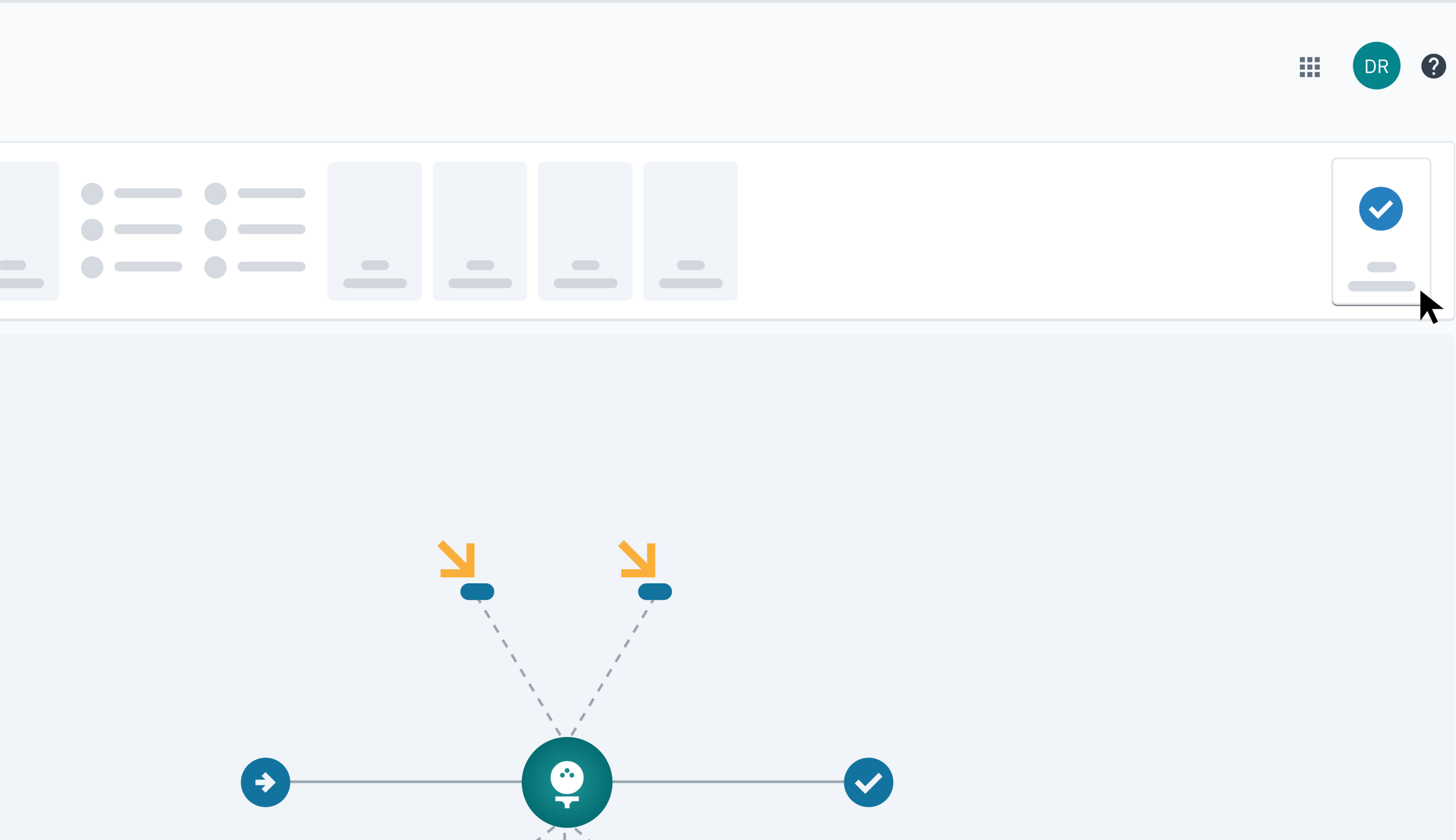
Golf_Ball_Connector
Save

UM26_Golf_Ball.prj

DR

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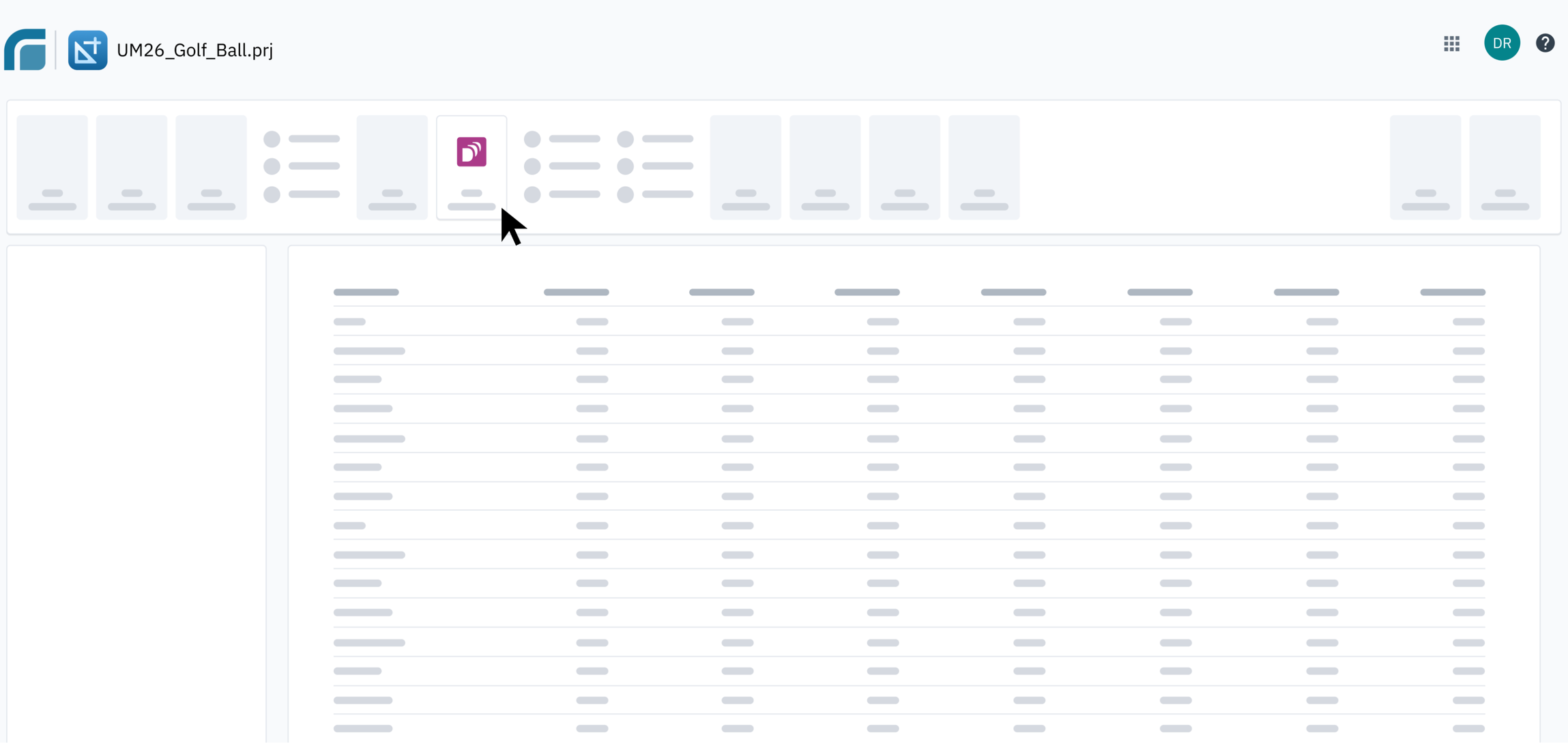
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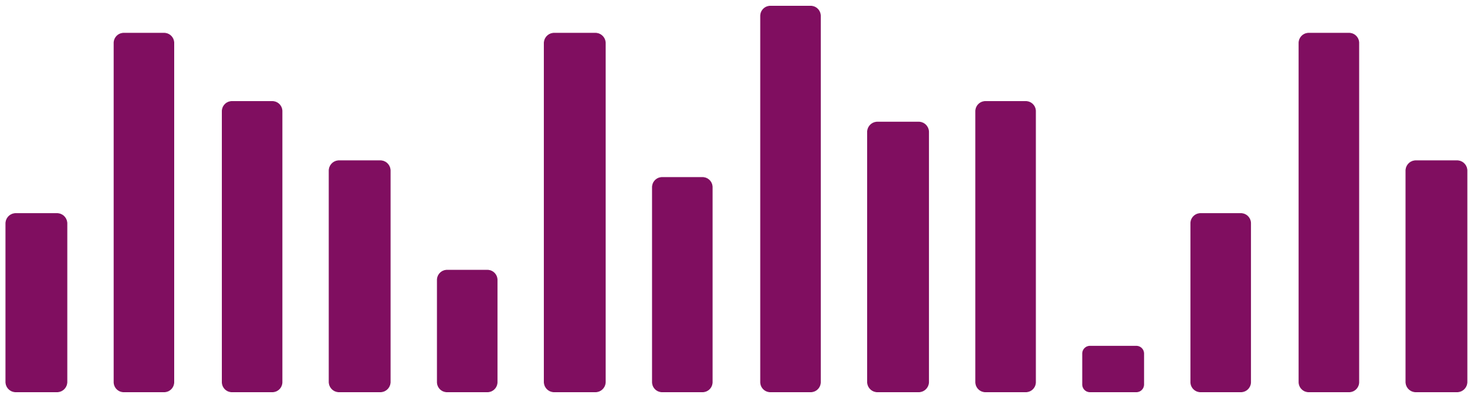
DR

UM26_Golf_Ball.rbxp

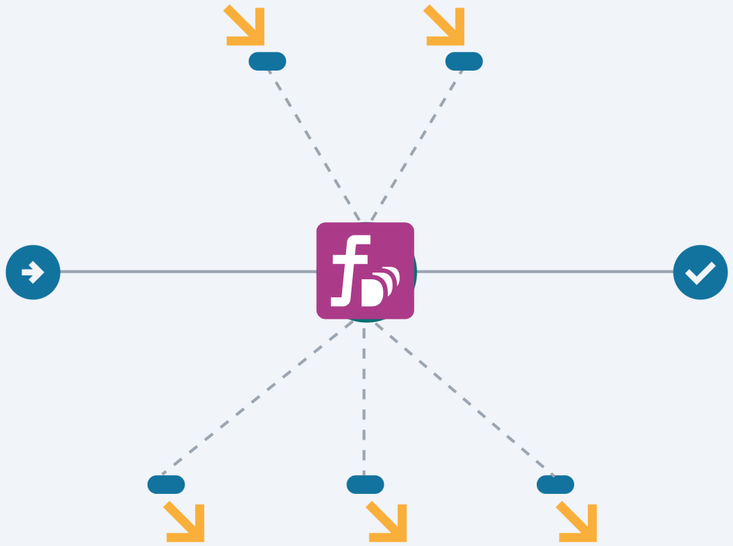
DR

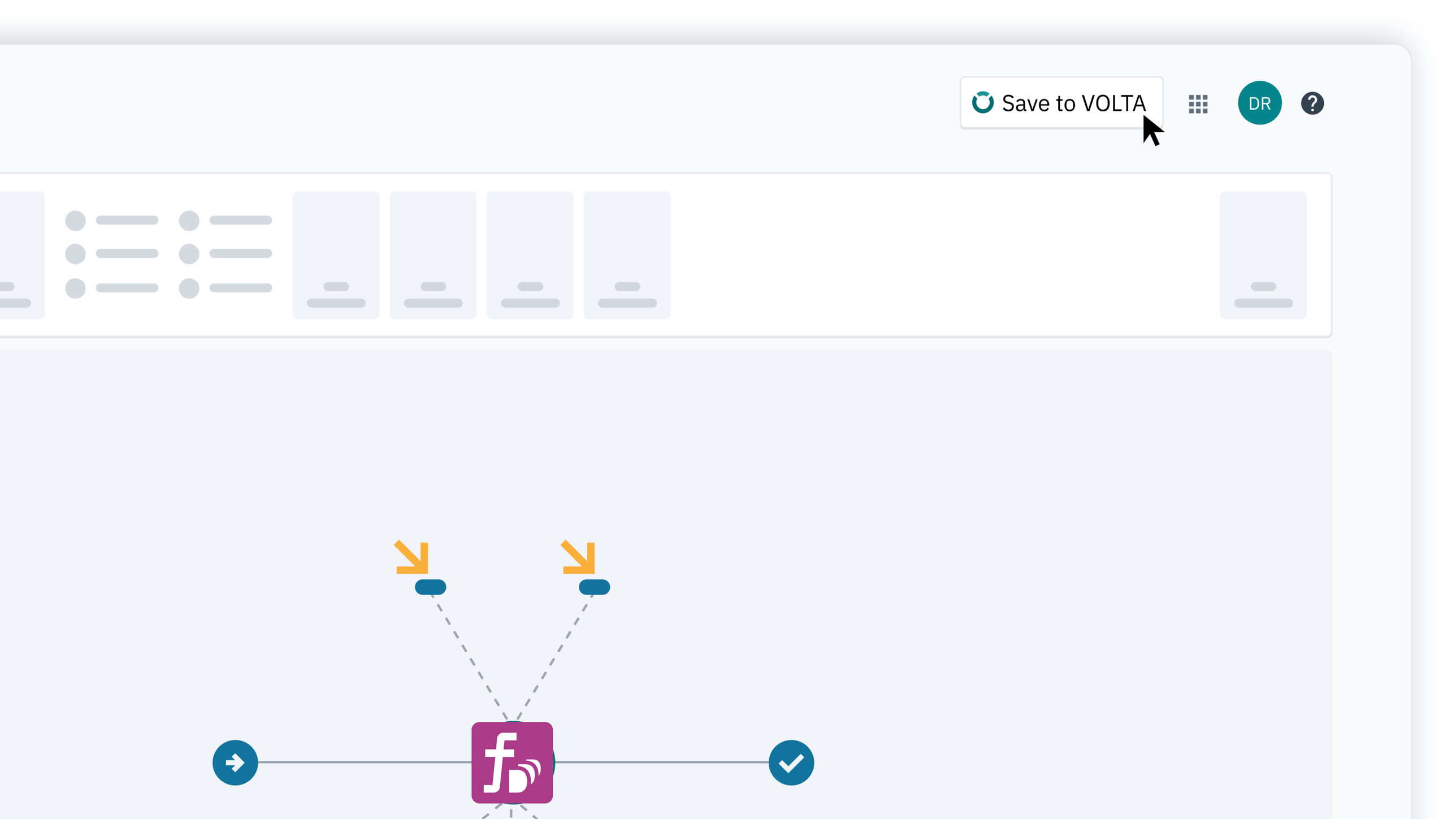


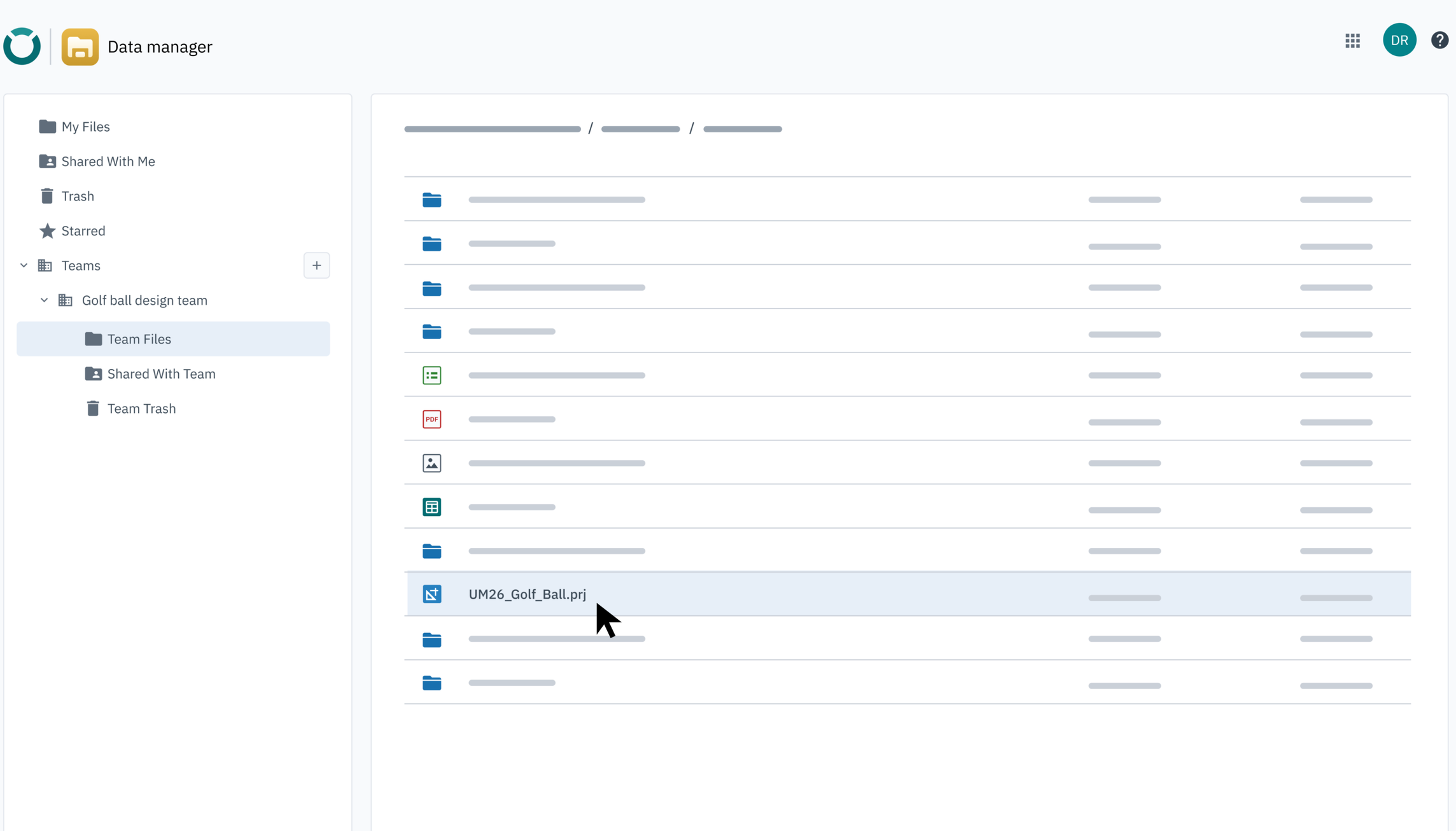
UM26_Golf_Ball.prj

Save to VOLTA

DR




Save to VOLTA
DR


Data manager
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My Files
Shared With Me
Trash
Starred
Teams
Golf ball design team
Team Files
Shared With Team
Team Trash
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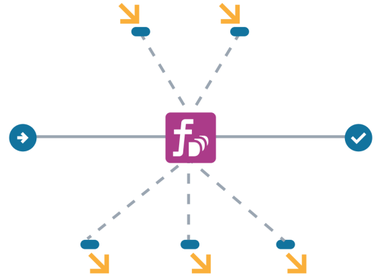
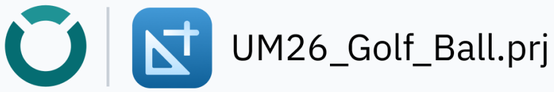
PDF
UM26_Golf_Ball.prj

UM26_Golf_Ball.prj

DR

Sessions



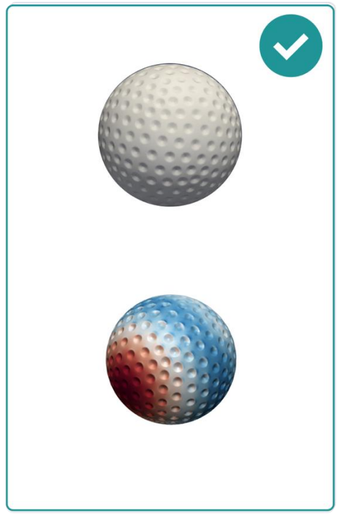


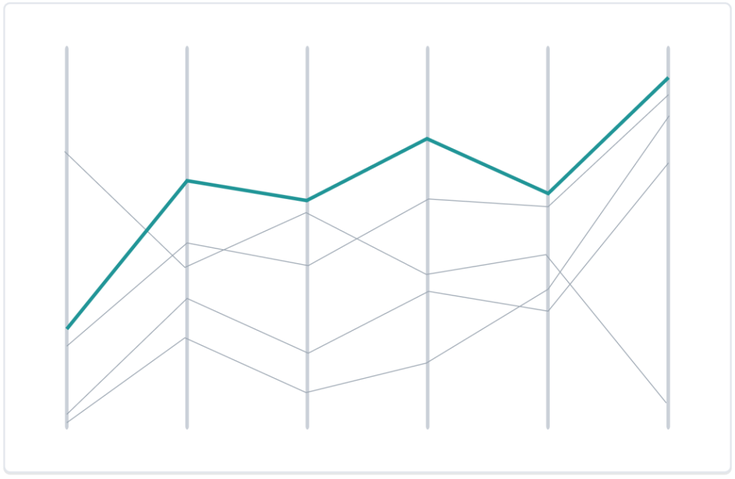
Sessions

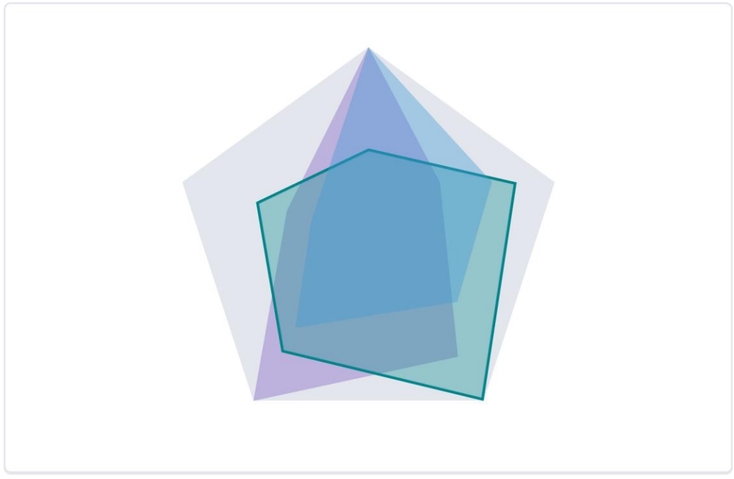
Compare in Advisor

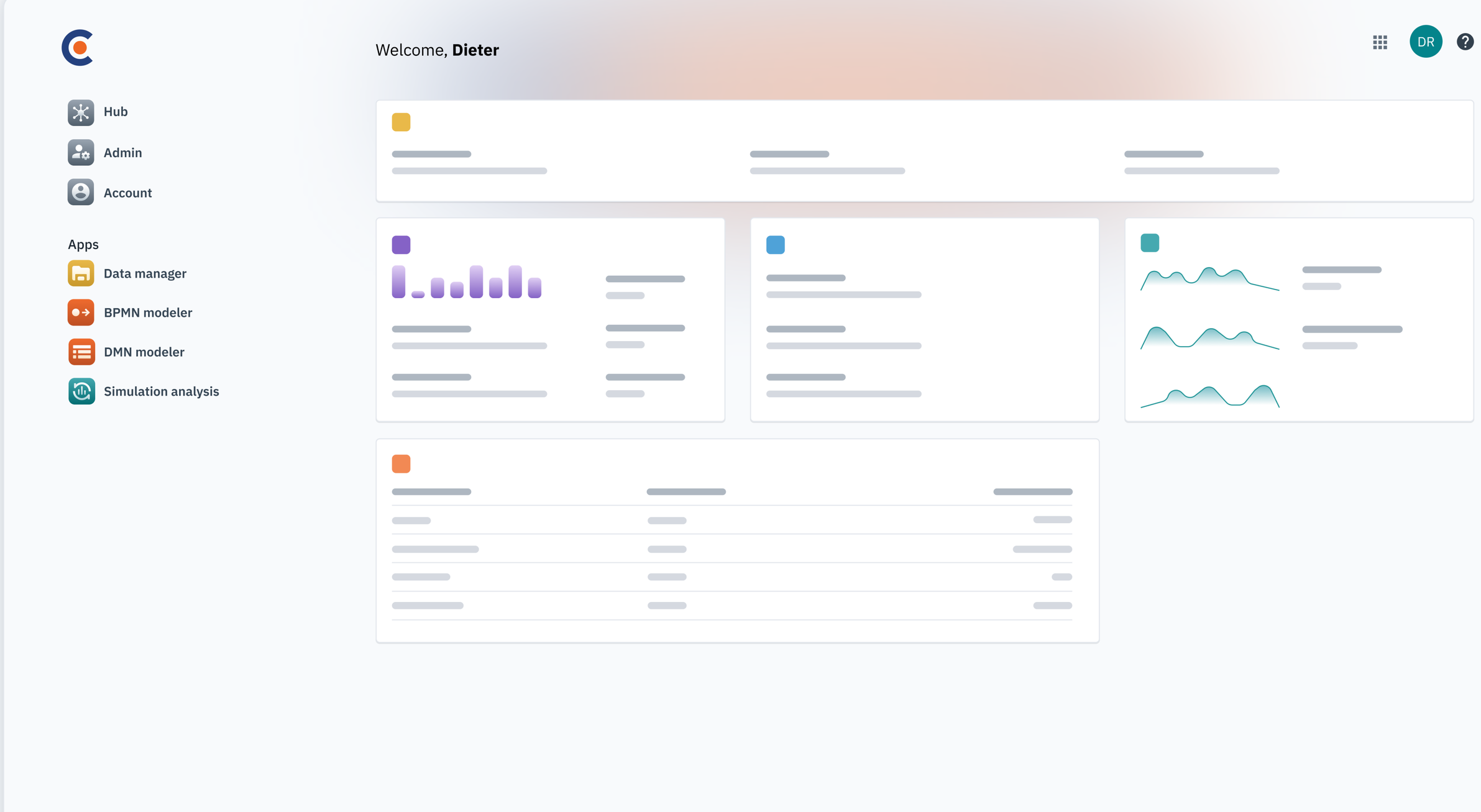
UM26 Golf Ball - Comparison

DR





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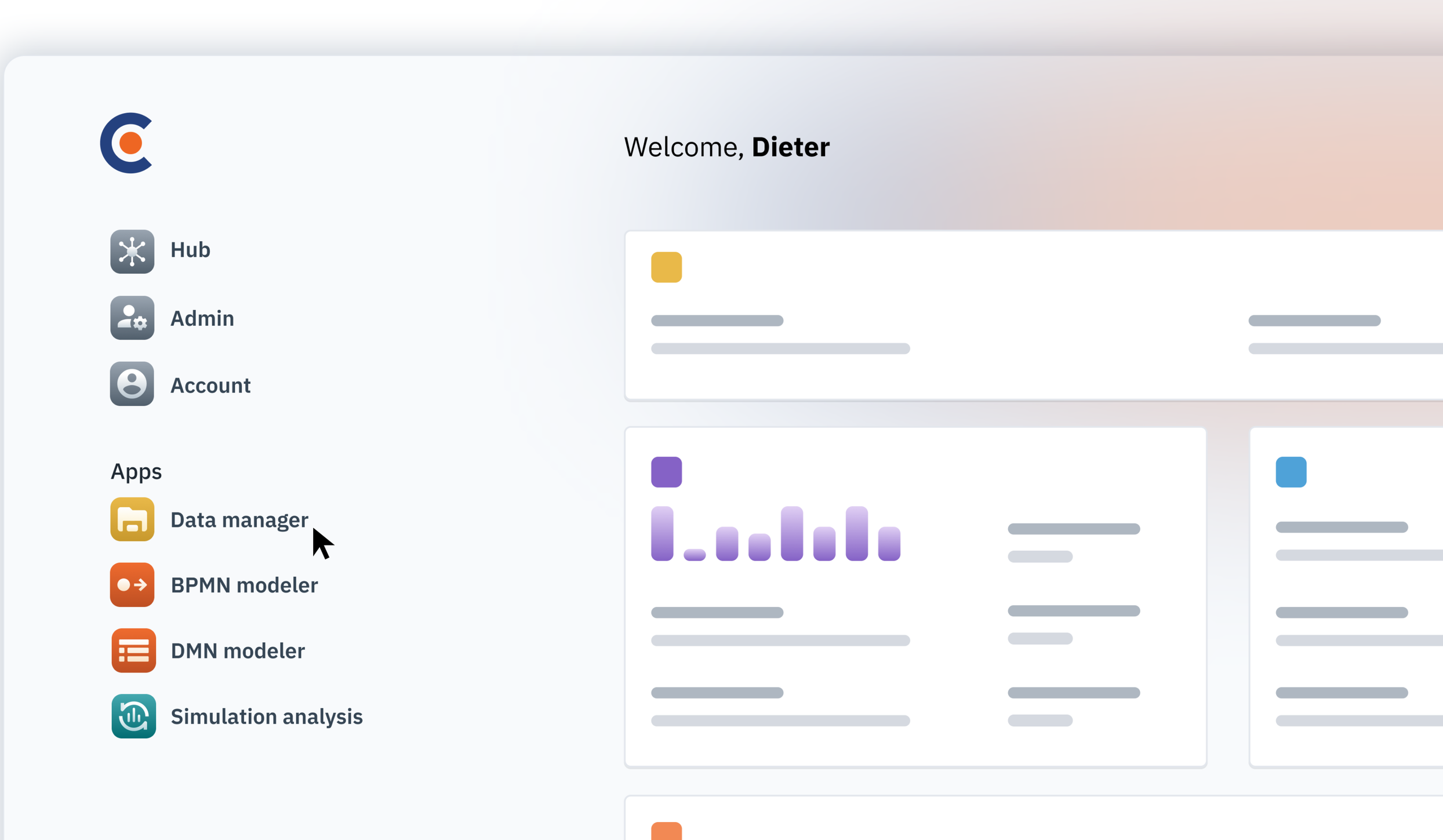
Apps
Data manager
BPMN modeler
DMN modeler
Simulation analysis


Welcome, **Dieter**
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BPMN modeler
DMN modeler
Simulation analysis

Welcome, **Dieter**

Hub

Admin

Account

Apps

Data manager

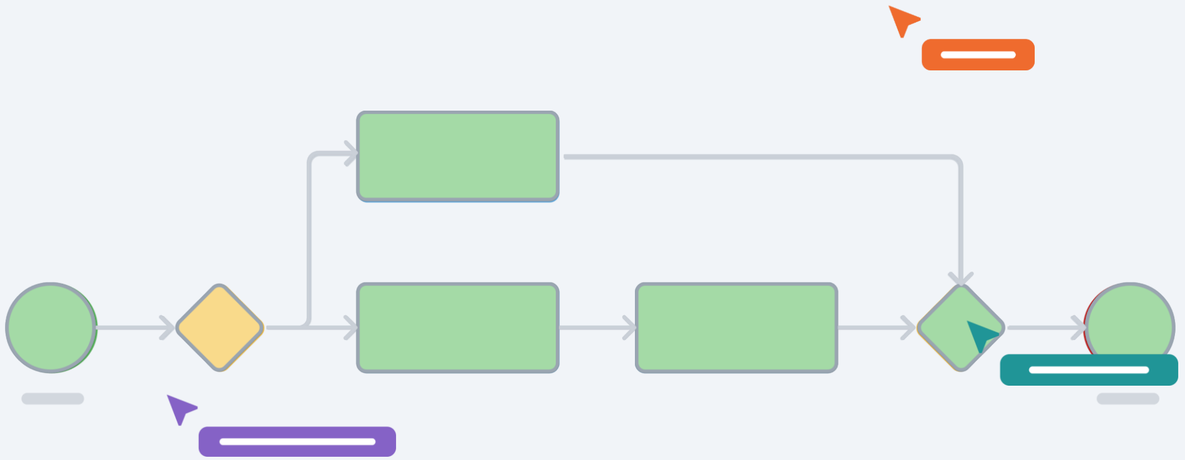
BPMN modeler

DMN modeler

Simulation analysis

Manufacturing of UM26 Golf Ball

DR



SOUL

News

ESTECO design system is now public

4 June 2024

As announced today at the ESTECO International Users' Meeting 2024 in Trieste, we're thrilled to share that SOUL, our design system, is now publicly available.

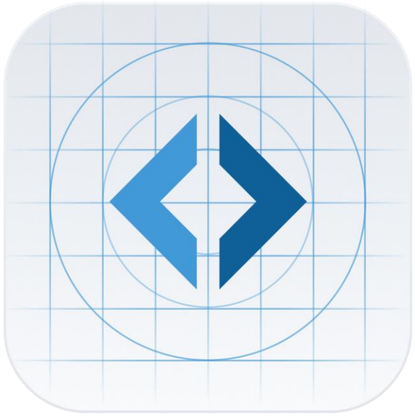
SOUL is a collection of visual parts, user interface components and content guidelines that are used by designers and engineers to build consistent and quality experiences at scale, efficiently.

We use SOUL to design and build the user interfaces of all our web-based products, including VOLTA, Cardanit, product user guides, mobile apps and websites.

The public release of SOUL makes us push towards higher quality experiences, enables us to be transparent and attracts talent who share our commitment to quality.

ESTECO users can take advantage of SOUL and VOLTA APIs to create web apps, mobile apps, web-based desktop apps that work with VOLTA and extend VOLTA capabilities by offering a seamless and personal user experience across ESTECO

Web Components



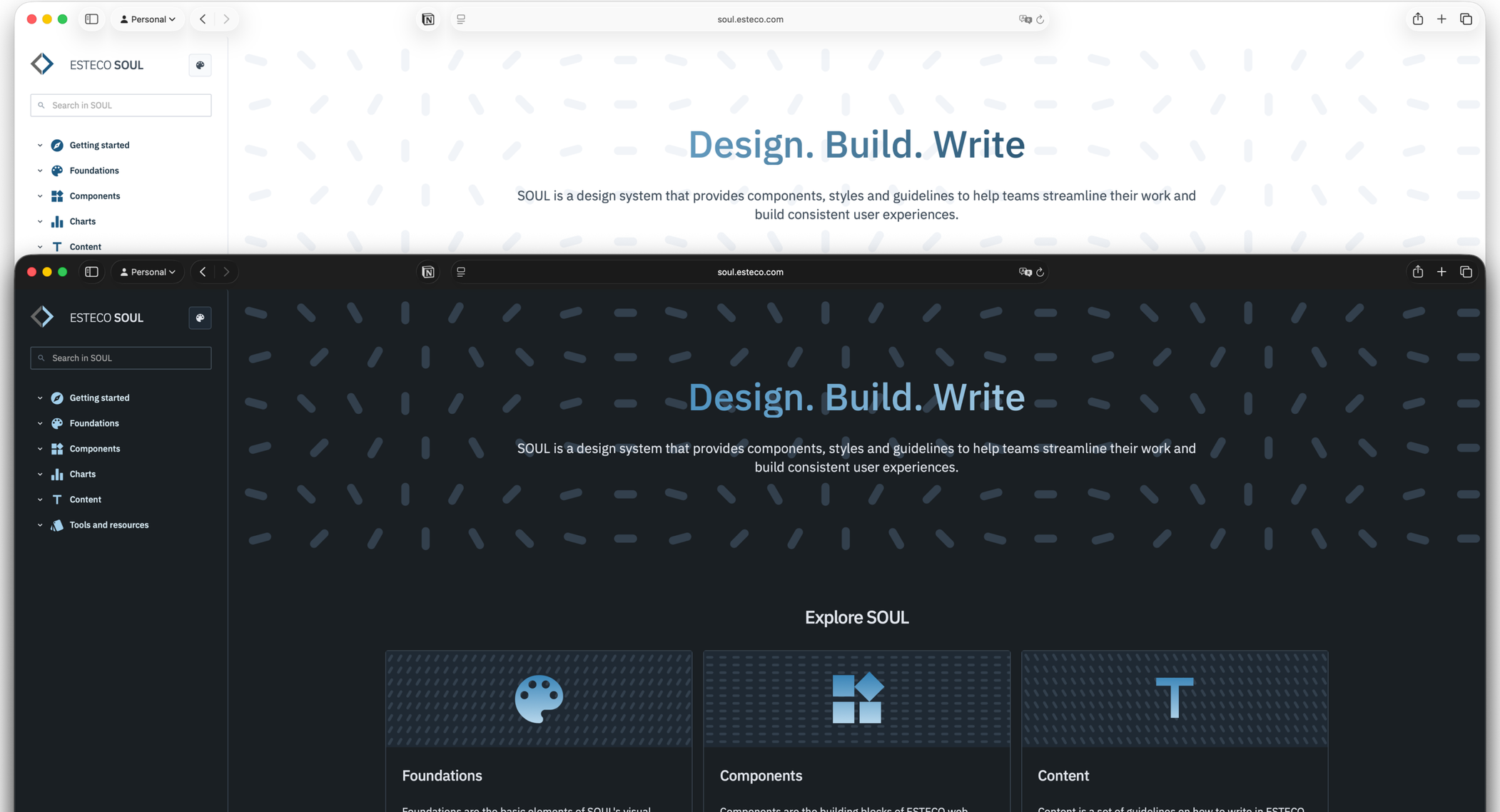
Web Components

SOUL Charts

Web Components

SOUL Charts

SOUL AI


Personal
soul.esteco.com
ESTECO SOUL
Search in SOUL
Getting started
Foundations
Components
Charts
Content
Tools and resources
Design. Build. Write
SOUL is a design system that provides components, styles and guidelines to help teams streamline their work and build consistent user experiences.
Explore SOUL
Foundations
Components
Content





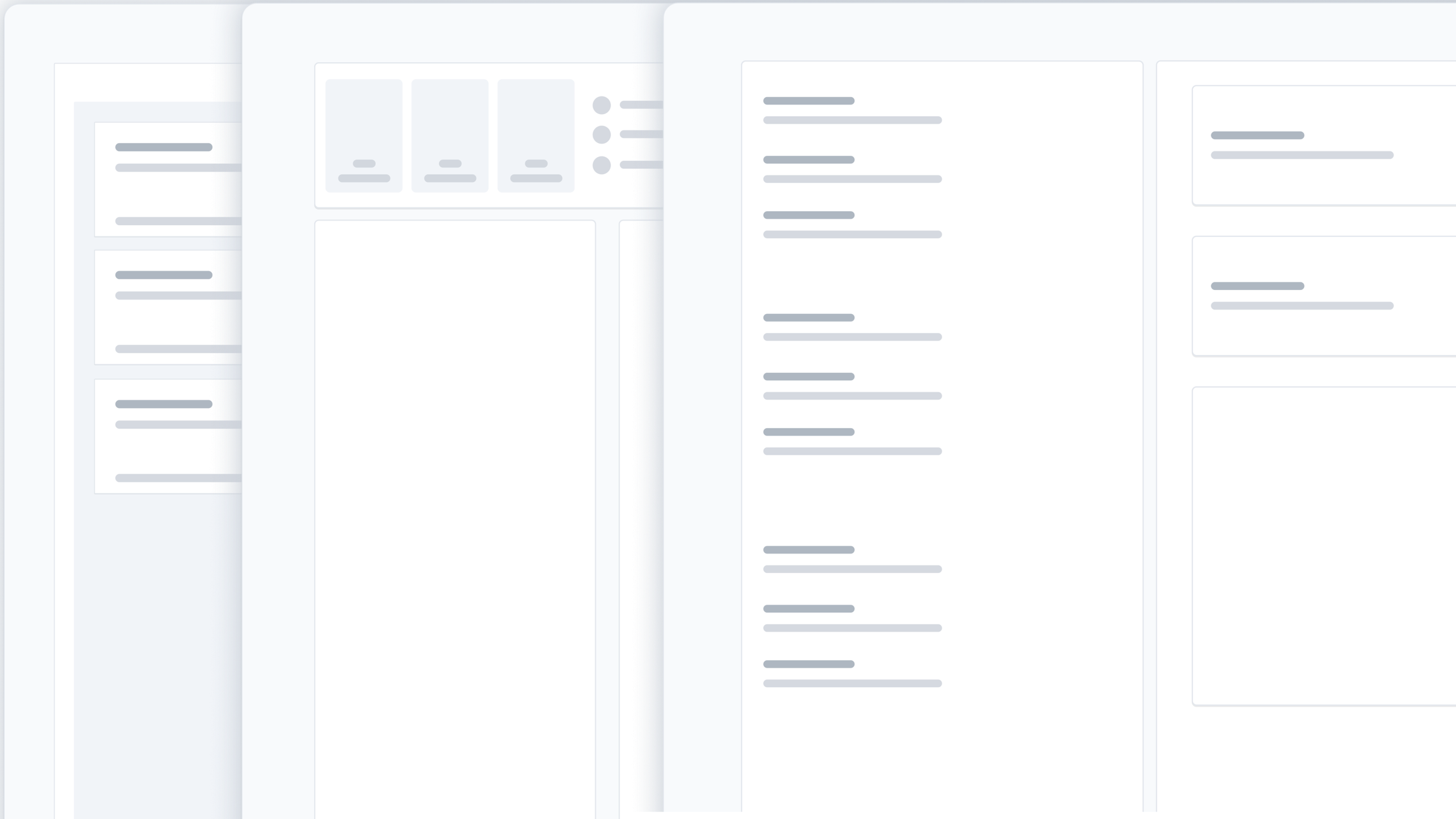


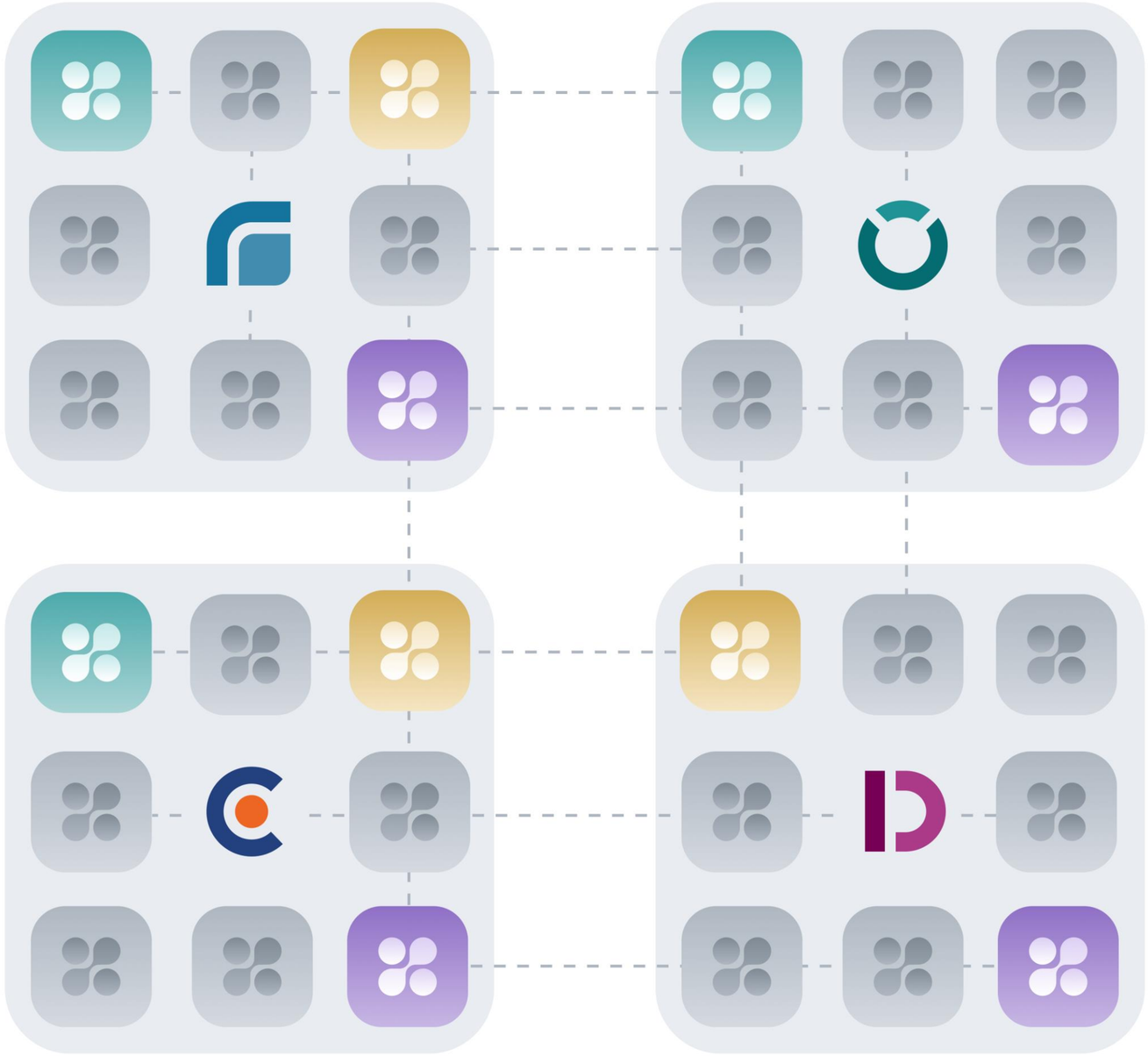










Users

AI implementation

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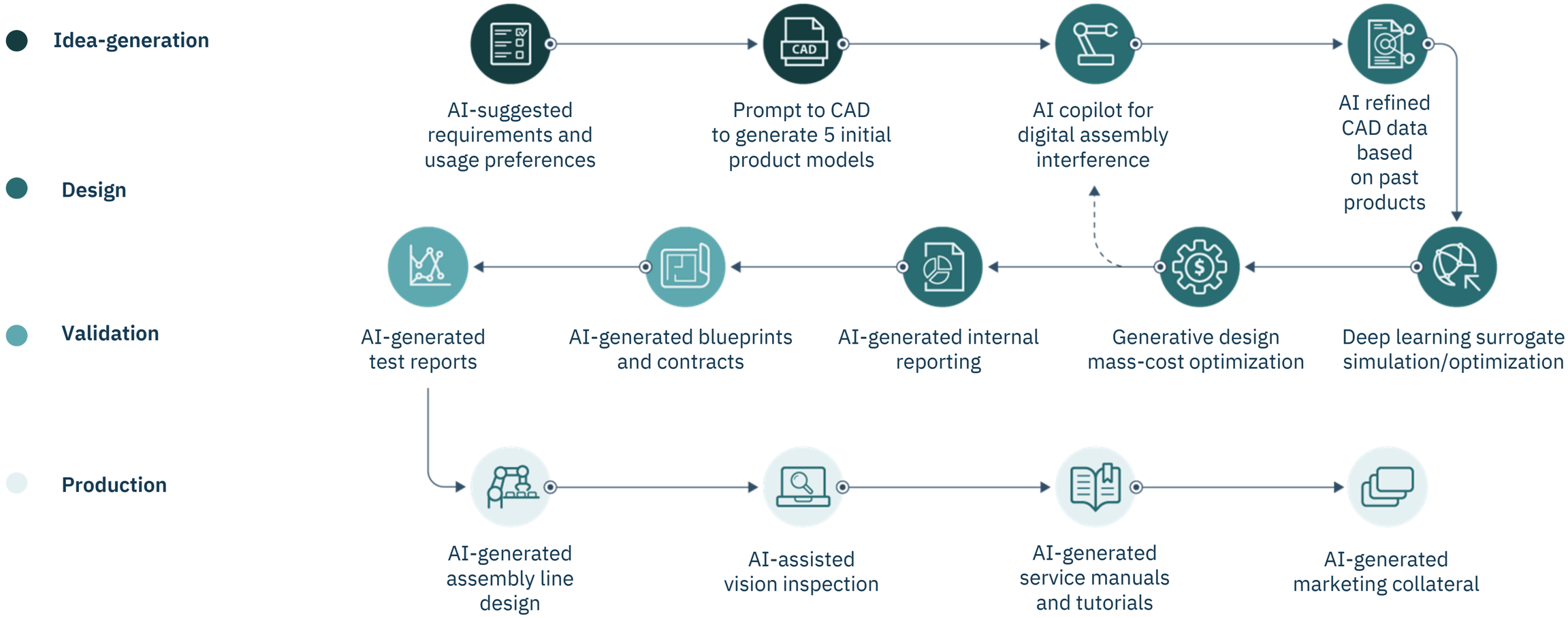
A day in the life of an engineer will soon look different



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Source: Using AI to supercharge R&D - Takeaways from the R&D Leaders Forum | McKinsey & Company

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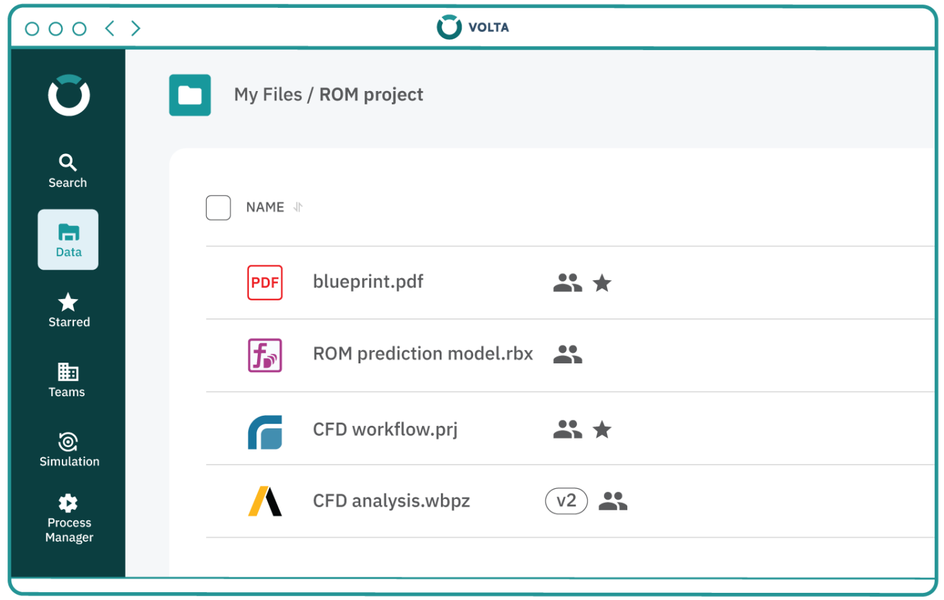
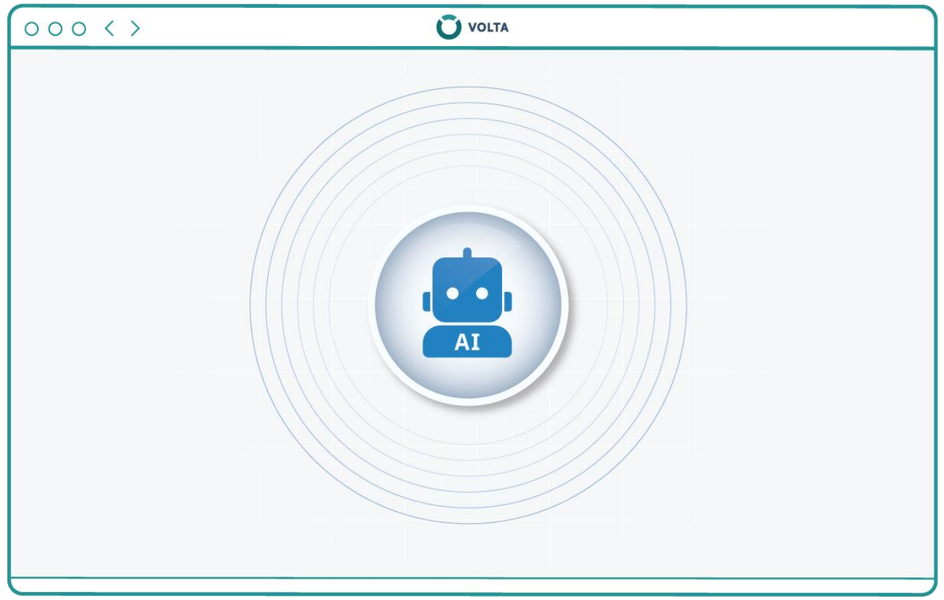
AI use cases in VOLTA



Physics AI (current)

Govern trained nD Modeler AI/ML models, enabling deployment and consumption for fast design predictions.



Engineering with AI (future)

- AI Copilot model
- Agentic AI expansion: VOLTA Model Context Protocol (MCP) server

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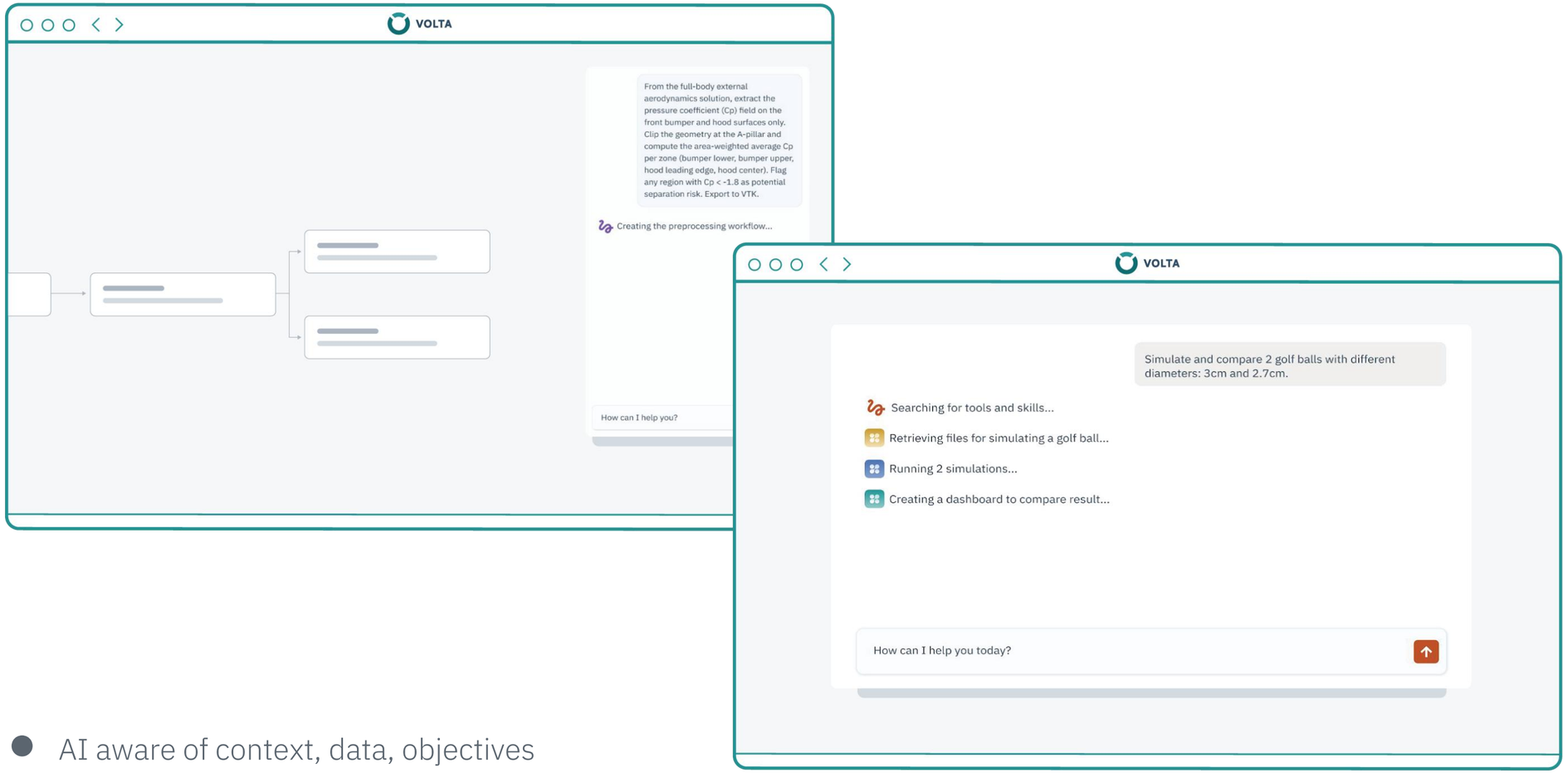
Copilot model: “inside” ESTECO software



- AI aware of context, data, objectives
- Users converse with their work
- VOLTA provides the engineering context and the AI provides the intelligence
- The result: AI that understands simulation

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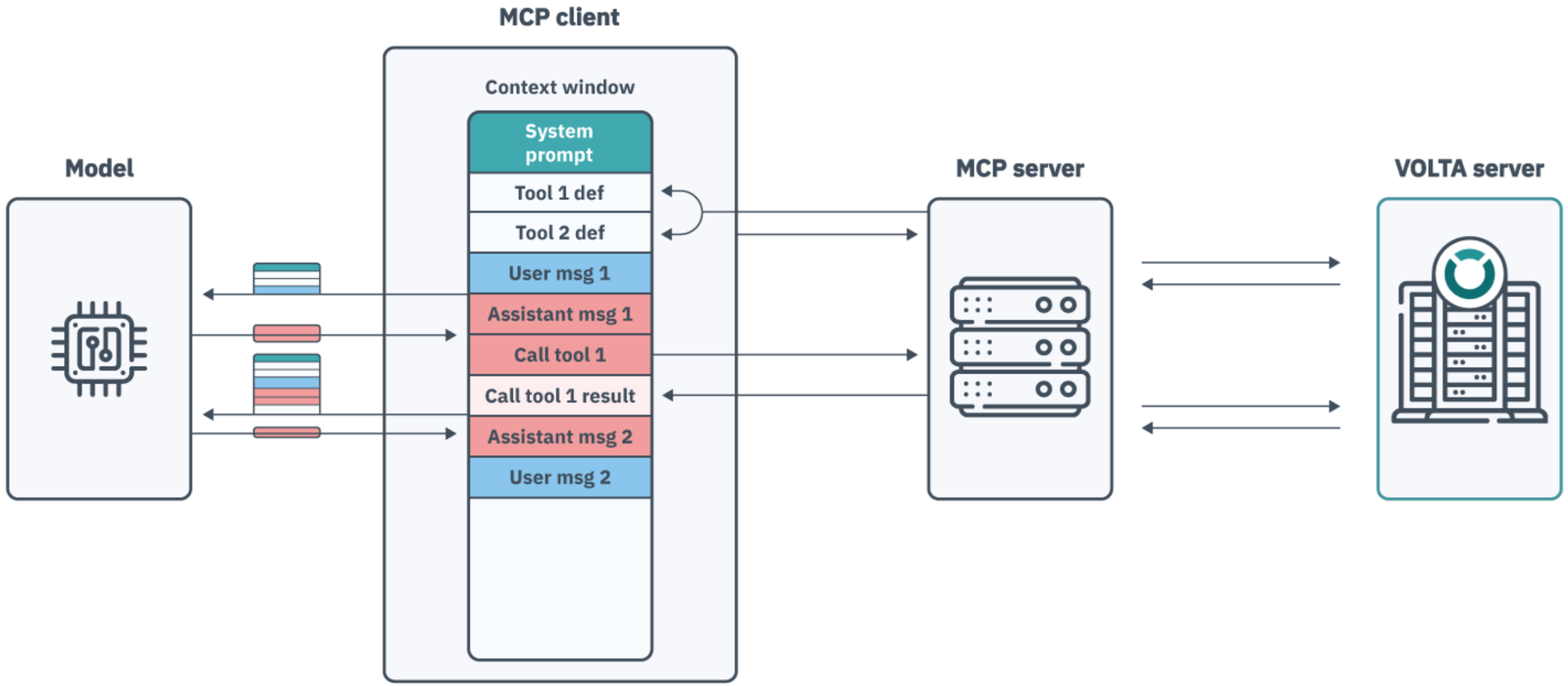
Agent model:“outside” ESTECO software

- AI agents query the platform through APIs
- VOLTA provides the context: the what, the why, the reasoning
- Retrieve data, compare results, kick off processes with no human in the loop
- VOLTA becomes the system of record for simulation in the agentic world



Source: modified from “Code execution with MCP: Building more efficient agents” | ANTHROPIC

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VOLTA roadmap

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Roadmap

TO DO

BPMN Call Activity
Run processes from another process

VOLTA App APIs
Expand API coverage to all apps

VOLTA Introspection
Run models on the web

VOLTA Service app
Create simulation services

DOING

VOLTA External data Sources
Link VOLTA to other enterprise systems

Business process simulation
Simulation

Data Manager Visible Teams
New Teams for open collaboration

VOLTA New Packaging
Unified deployment option

VOLTA Specialized Apps
Specific apps for specific tasks

Cloud Scalability and Multi-site
Horizontal Scalability, Backup and Multi-site

Metadata
VOLTA Items description

DONE

MBSE Plugin for VOLTA
Connect SysML models to simulation

New VOLTA data manager
Best performance and user experience

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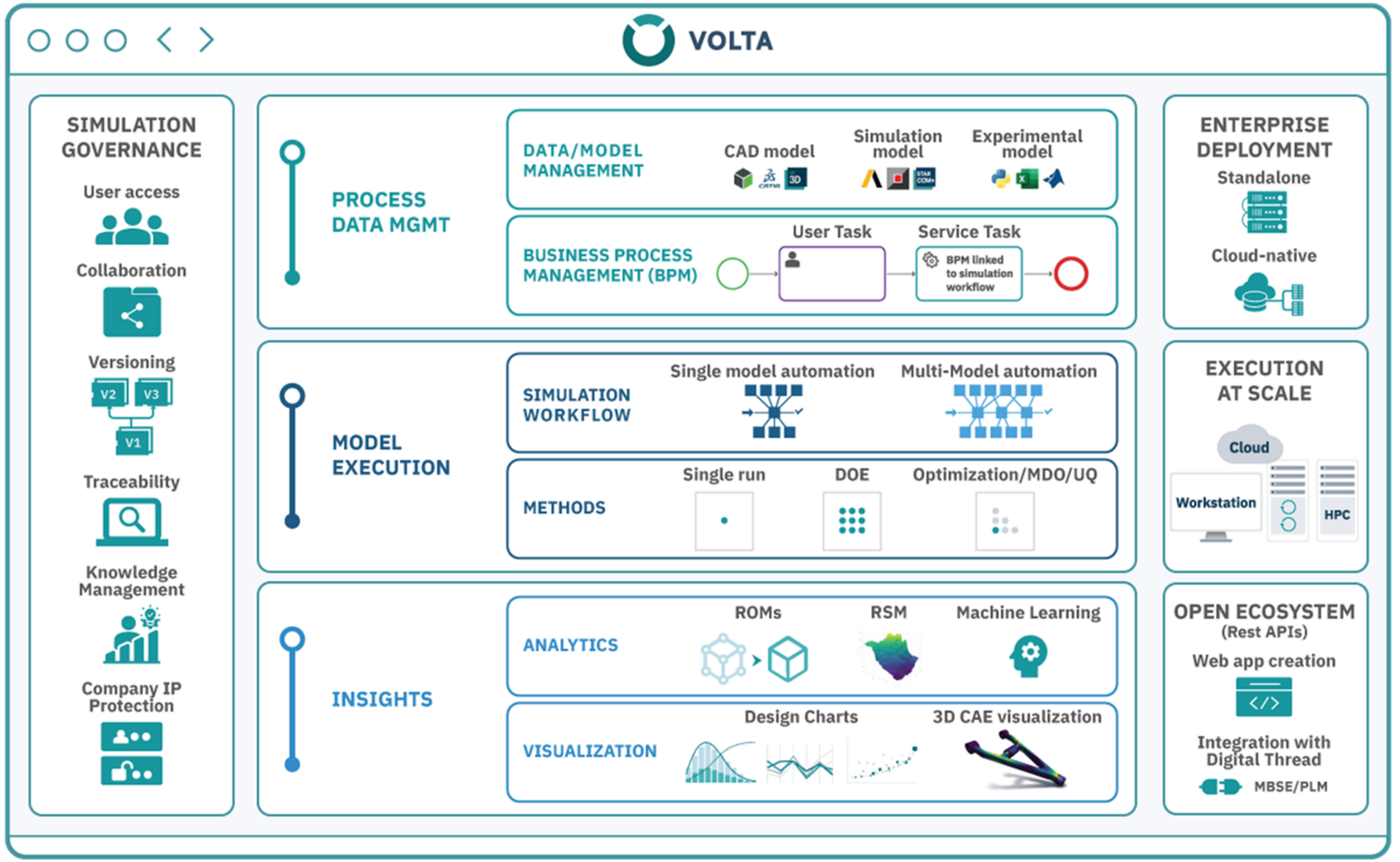
VOLTA at glance



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Thank you

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