3DConcepts

Streamlining Design Workflows with **User**-Centric, Adaptive and Collaborative 3D Spaces

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Agenda

- Design Workflows
- Streamlined design workflows with instant3Dhub
  - 3D Spaces and 3D Data
  - 3D Streaming
  - 3D Data Virtualization
- Conclusion and Next Steps

Design Workflows & Tooling
Existing approaches and limitations

Approach Style	Defining Feature	Pro ☺	Con ☹
PLM Platform	• Immigration effort • Team modelling • Process setup	• CAD Support • Team Structure • Review Structure	• Scalability & cost • External Workflow integration
Workflow Tools	• Workflow tools with external document links	• Scalability • Team Structure • Security	• No CAD Support • No 3D Support
Heterogenous Tool Landscape	• CAD system • Independent review/workflow	• CAD Support • Independency • Standard Files	• Missing handover w. team members • Inefficiencies

Design Workflows at BMW

Simultaneous Engineering (SE) Process

- Who / Teams
  - Up to 10 member
  - Internal/external staff
- What / Setup
  - Small/medium structures
  - Part in scope of installation space (Bauraum)
  - Need-to-know security
- How / Model
  - From Waterfall to Agile: Maximizing Simultaneous Process
  - Local/Team-internal reviews, Team-internal responsible
  - Global reviews

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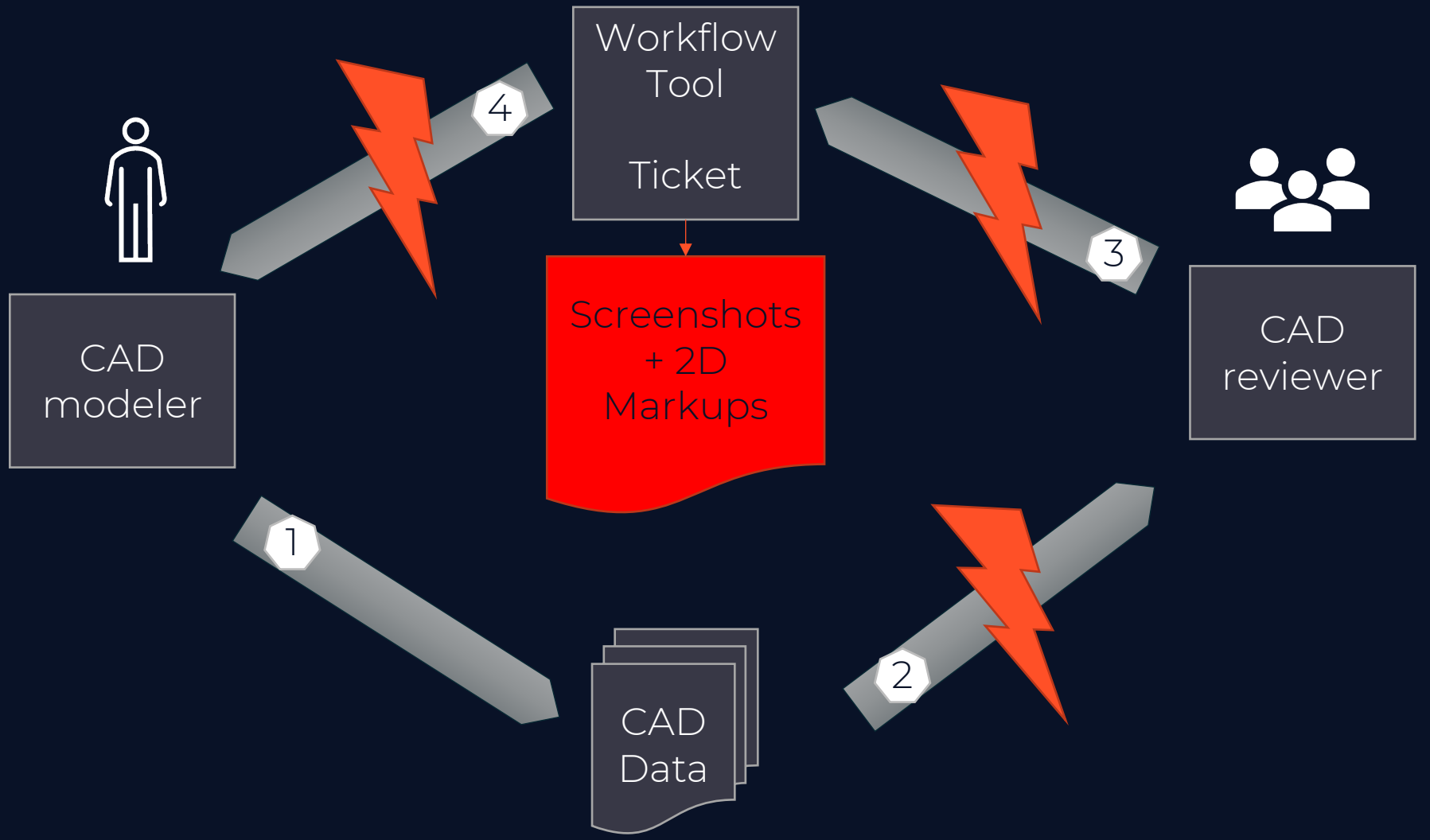
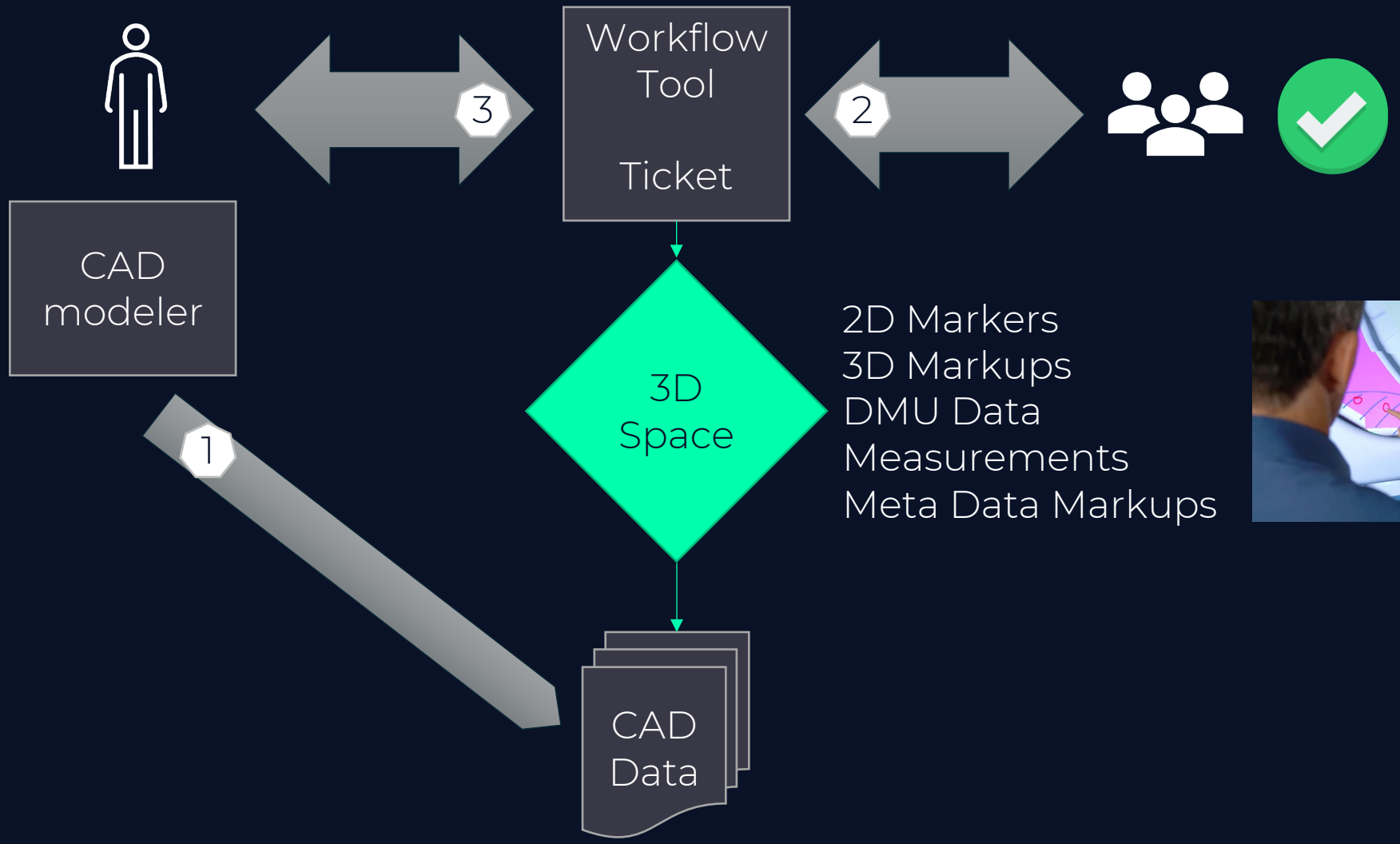
SE Tooling
Existing and inefficient solution



SE Tooling
Streamlined Solution with 3D Spaces

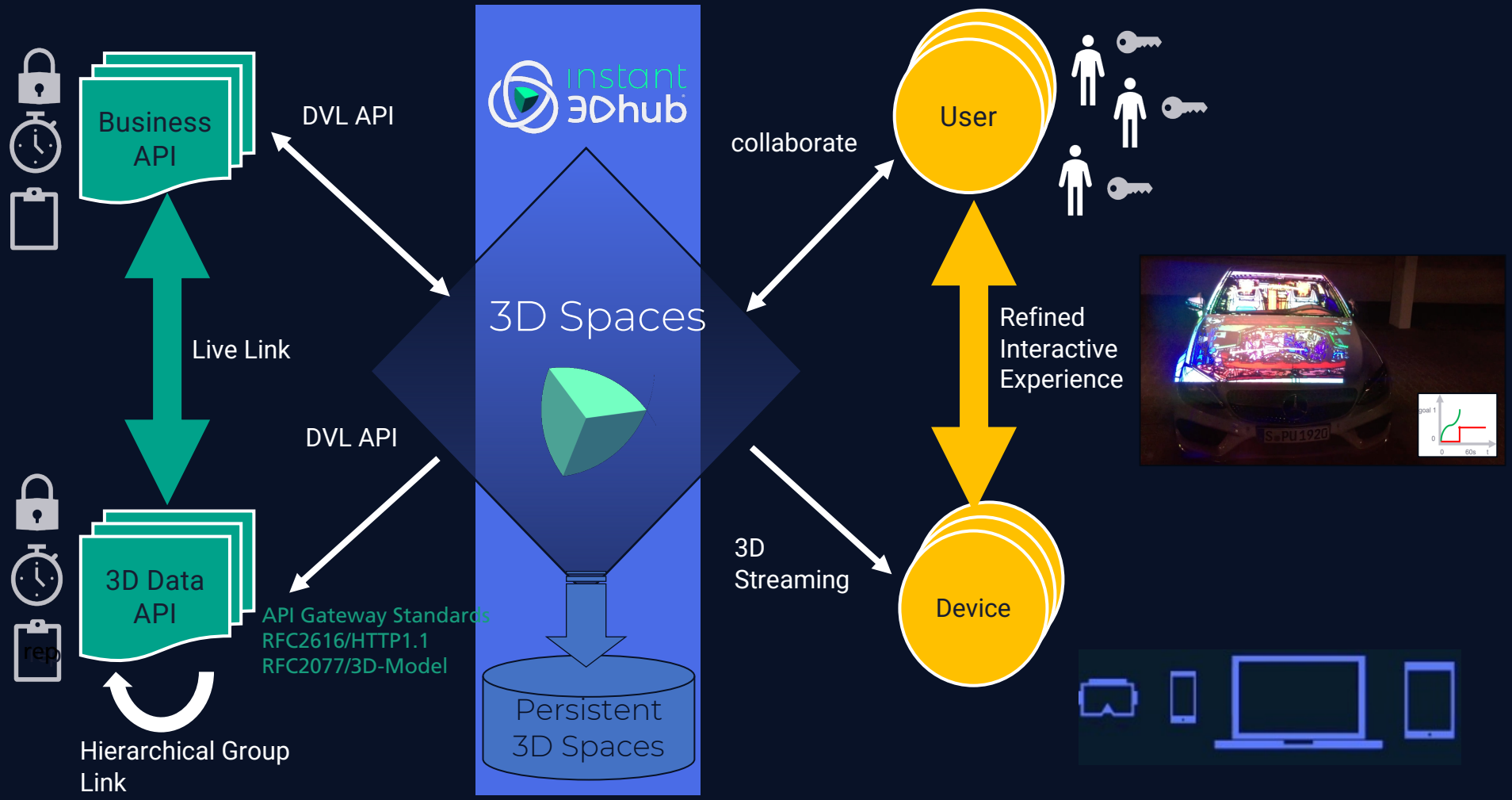


2D Markers
3D Markups
DMU Data
Measurements
Meta Data Markups

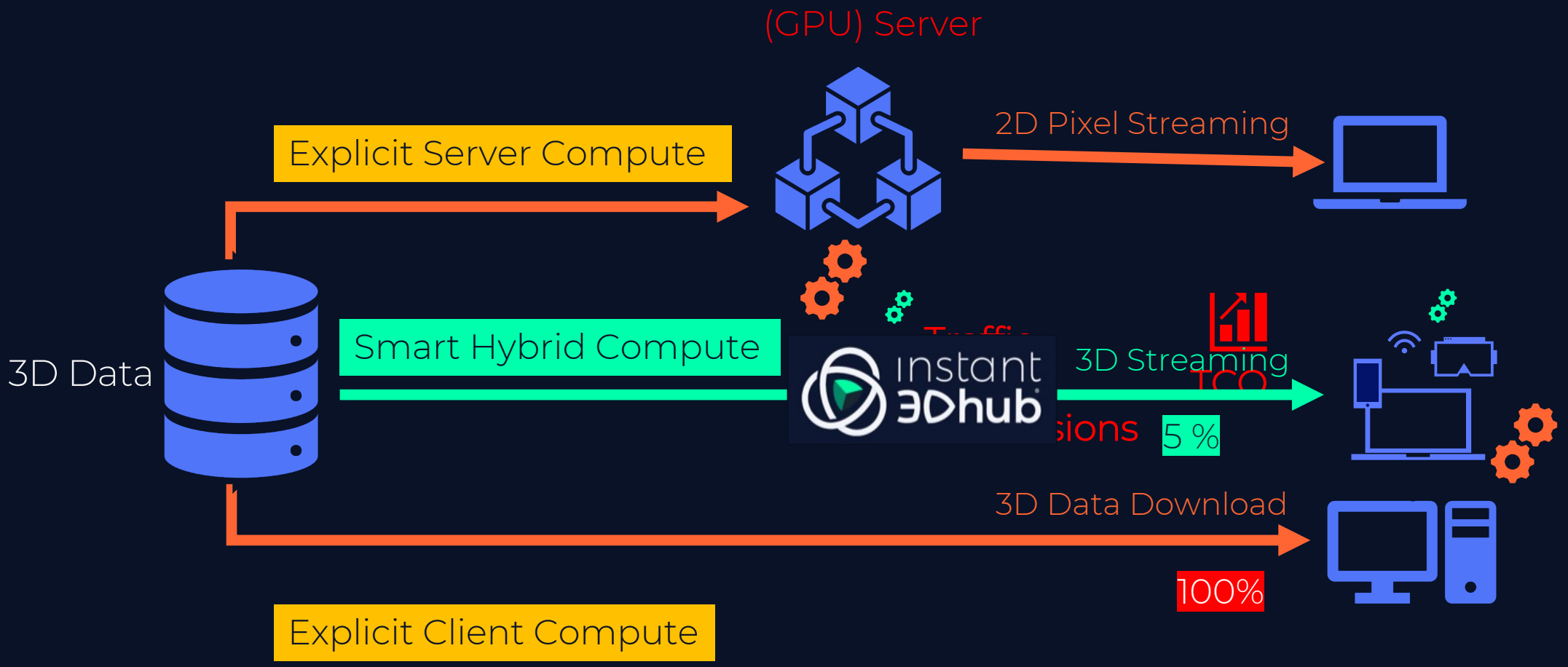
3D Spaces with instant3Dhub

Any Data, Any Device, Any Size

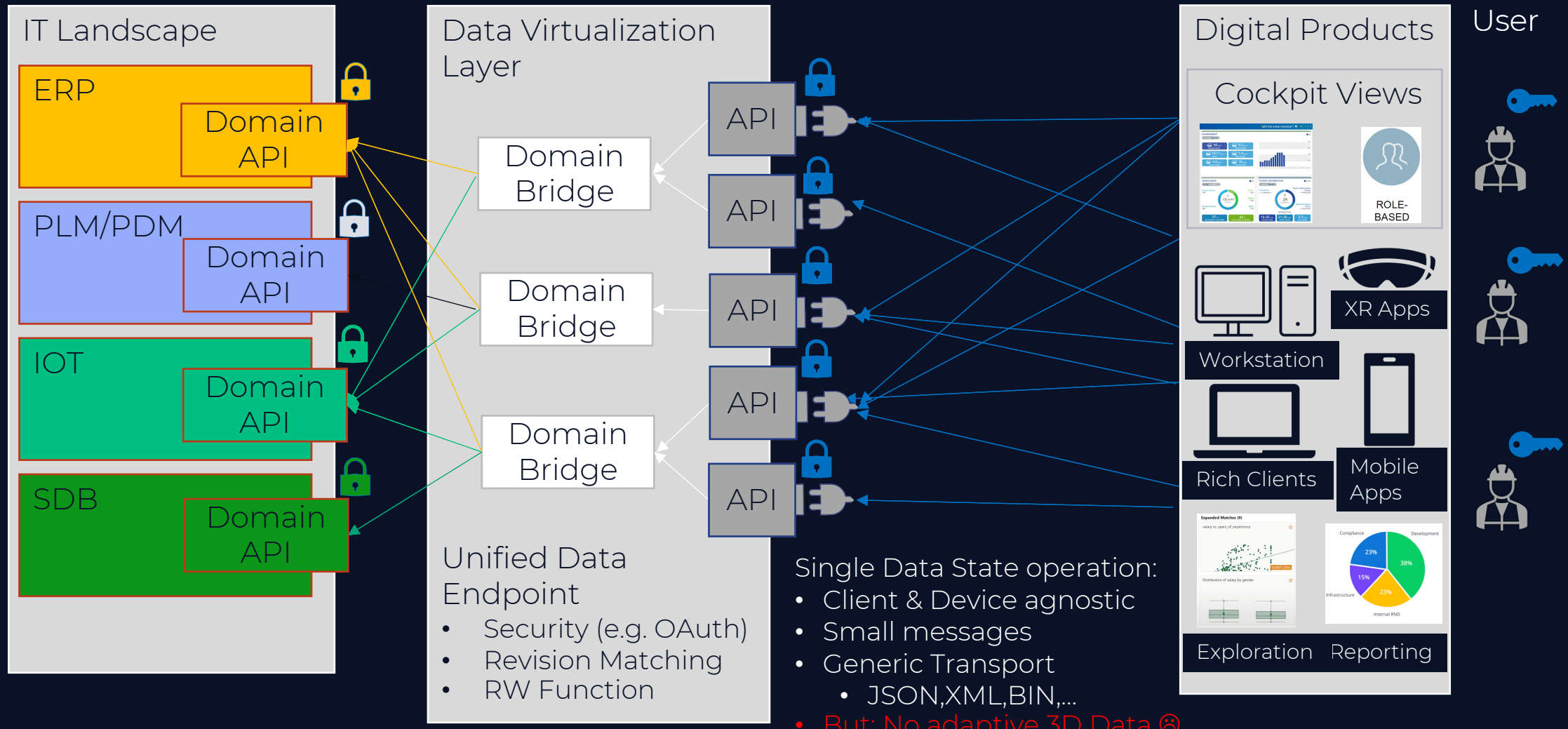
3D Spaces with instant3Dhub
Any Data, Any Device, Any Size



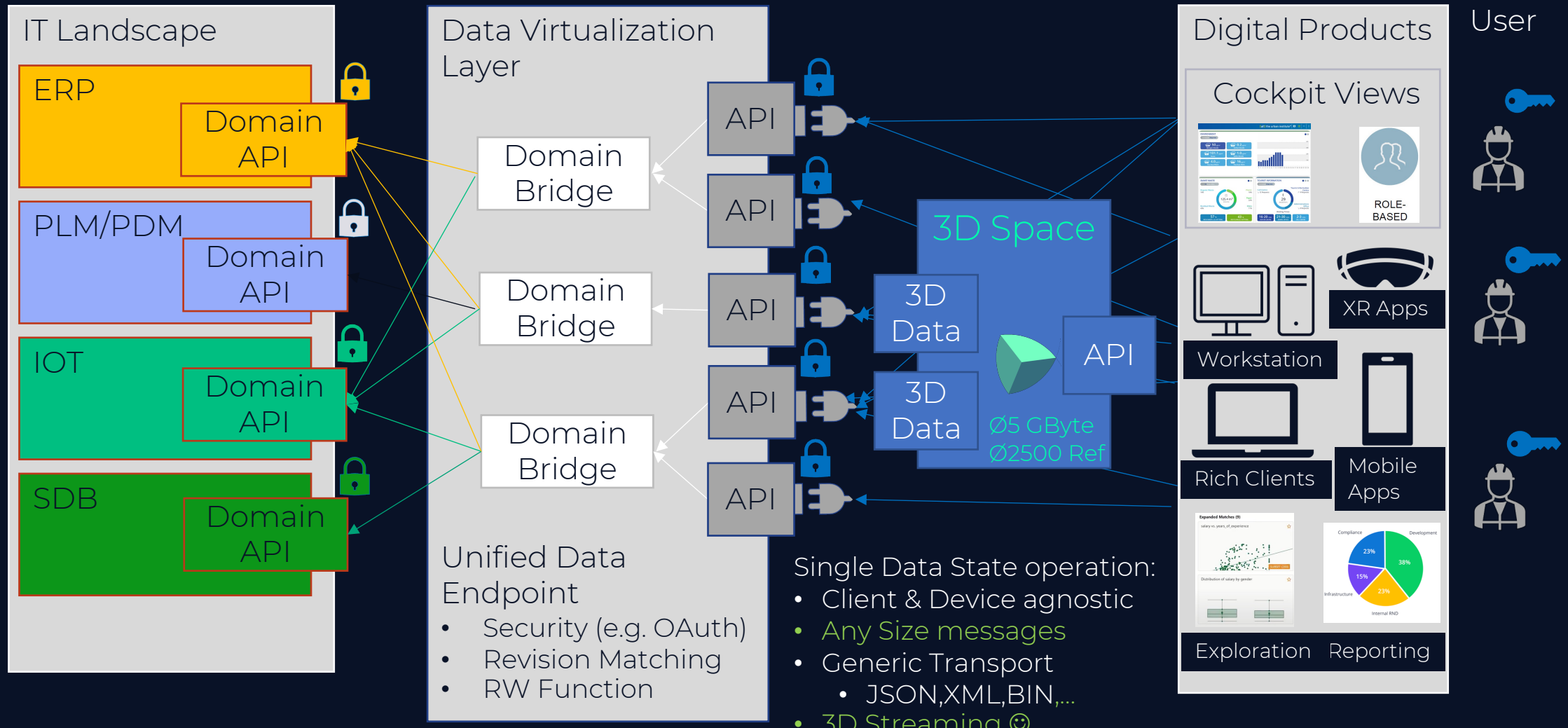
3D Streaming
Smart Hybrid Compute



Data Virtualization Layer (DVL)
Global digital transformation trend



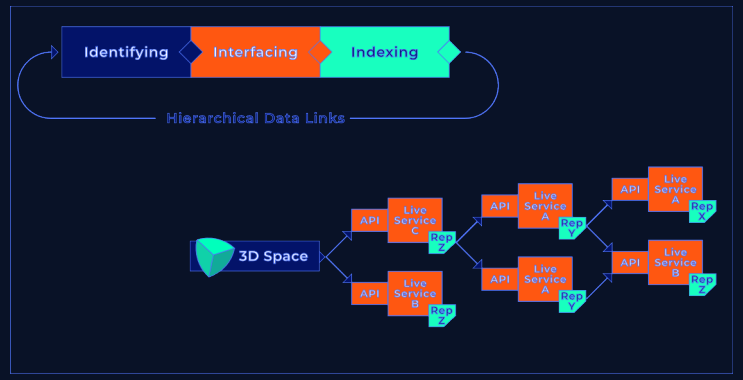
Data Virtualization Layer (DVL)
Perfect fit for 3D Data Gateways

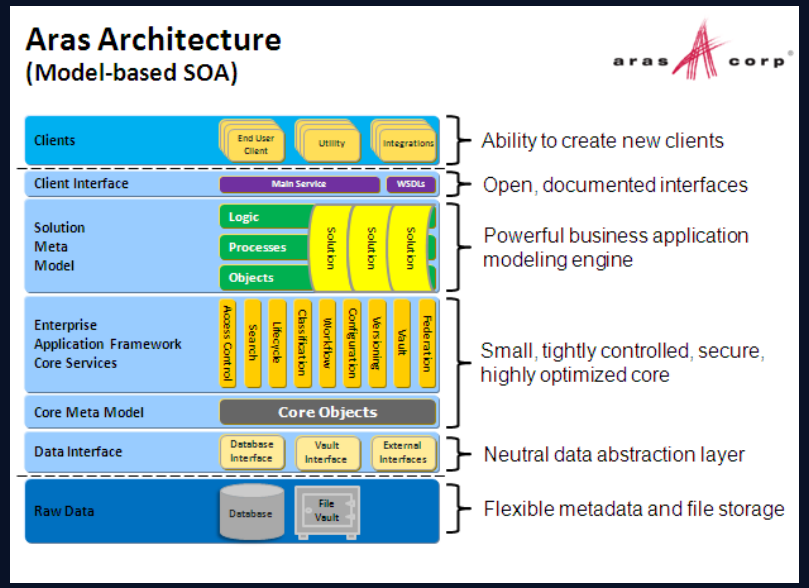


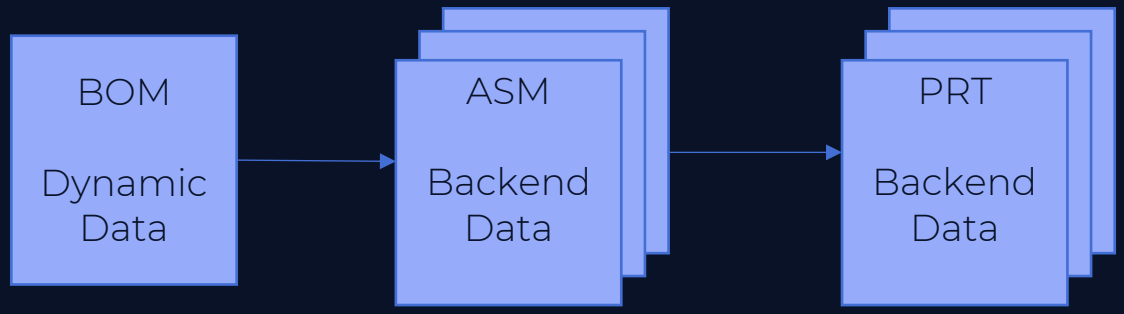
Single Data State operation:
- Client & Device agnostic
- Any Size messages
- Generic Transport
  - JSON,XML,BIN,...
- 3D Streaming ☺

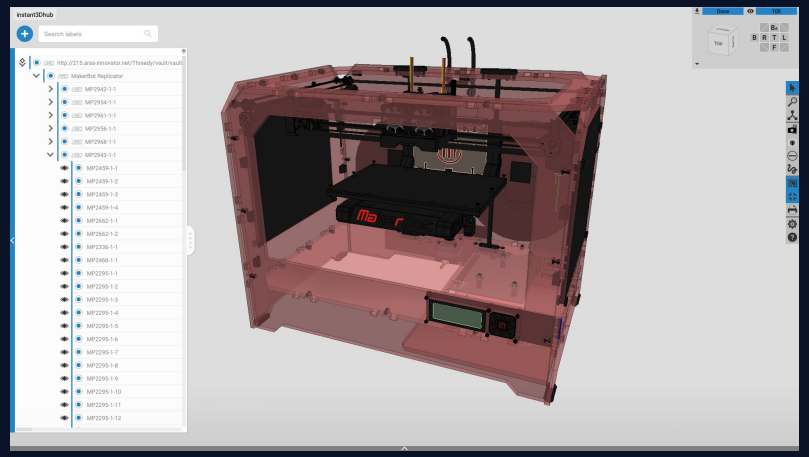
DVL Example 1/3: ARAS
PLM data integration

Direct REST data endpoint
https://aras.net/vaultserver?VID=...







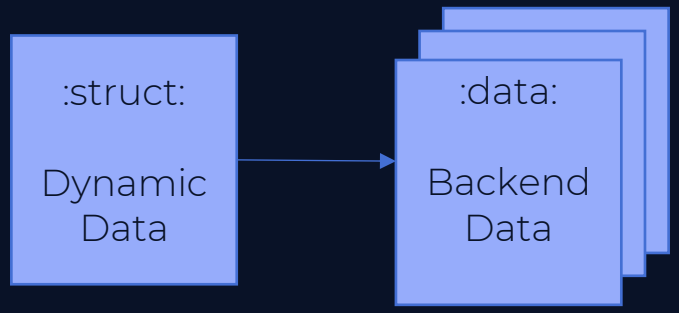


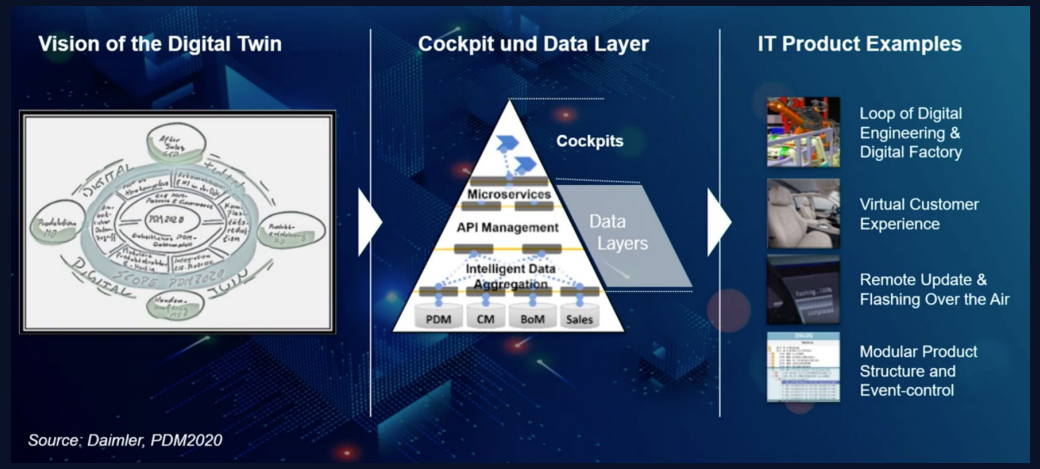
DVL Example 2/3: PDM2020
Daimler Digital Twin Architecture

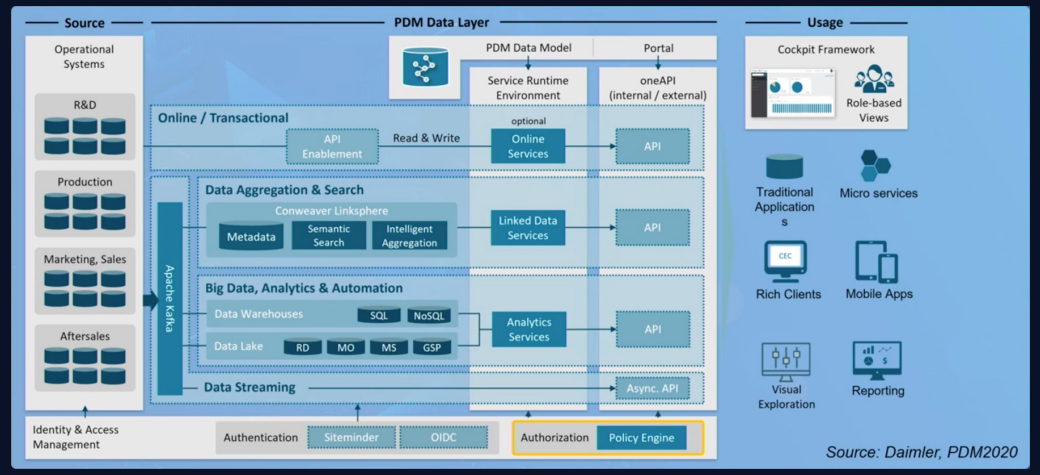
Configured Data-Gateways

urn:daimler:smaragd:struct:...

urn:daimler:smaragd:data:...





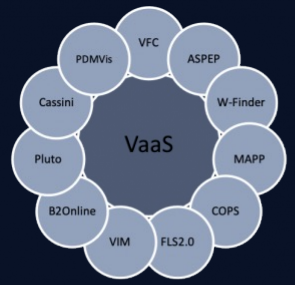


DVL Example 3/3: BMW
Visualization as a Service (VaaS)

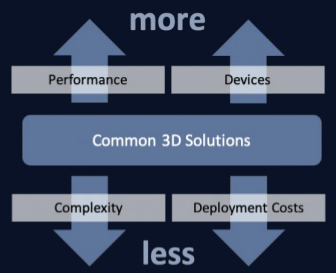
Configured Data-Gateways

urn:bmw:prisma:dokuid:...

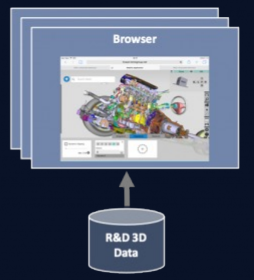
urn:bmw:caebench:...



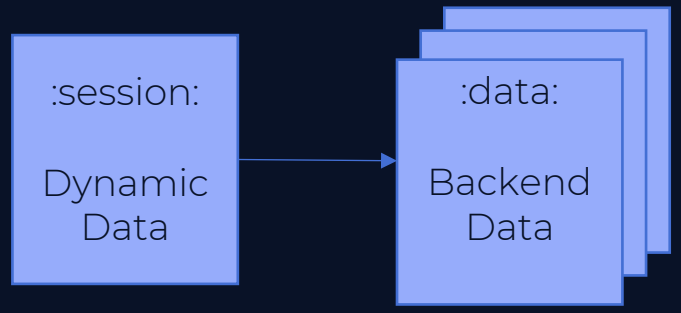
Global ✓

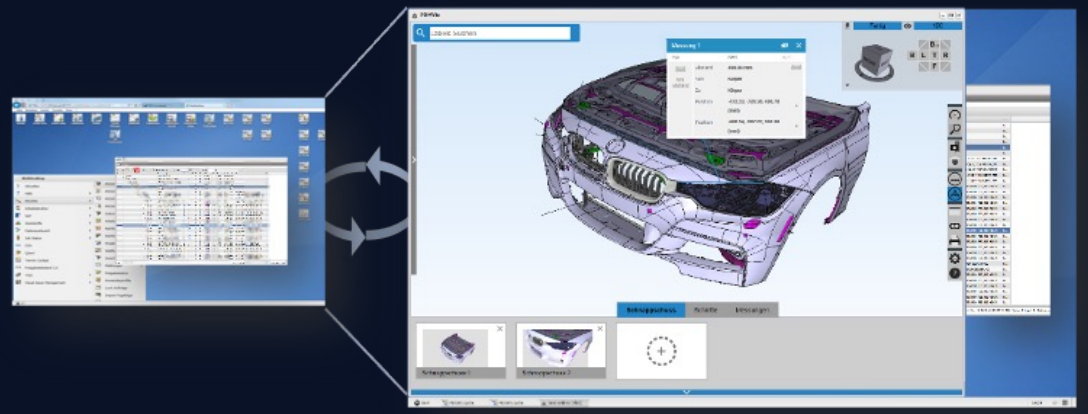


Smart ✓



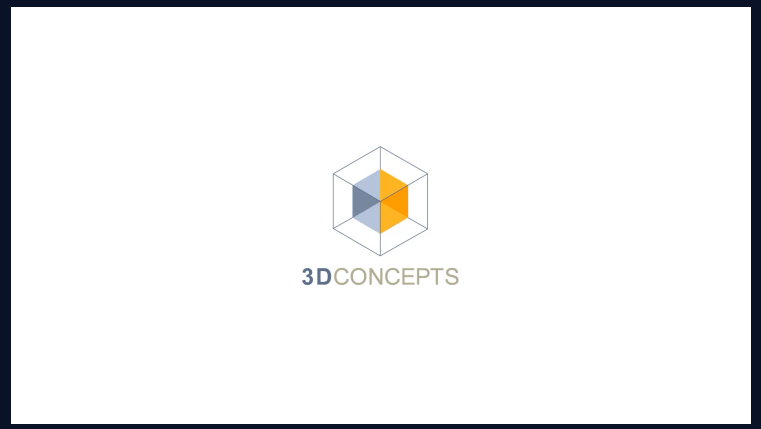
Real Time ✓





BMW Use Case
3D Concepts

- Core Values
  - Simple and intuitive UX/UI
  - 3D Annotation and 3D Markups
  - Live link to task management



- Multi CAD and Data
  - JT, CATIA V5, SIM-Data (A4DB)

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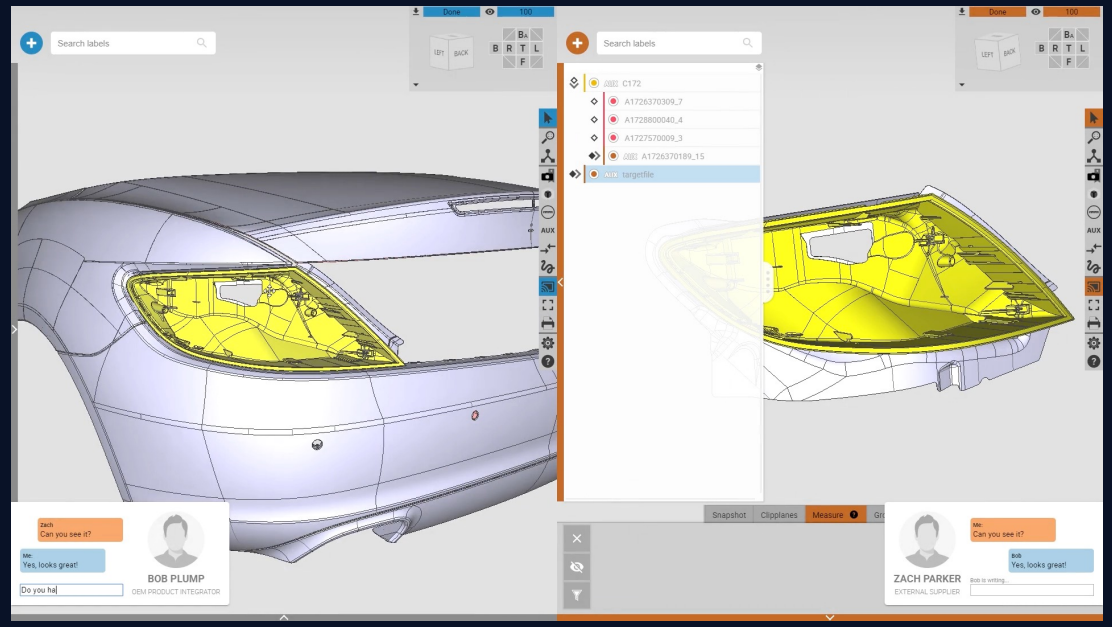
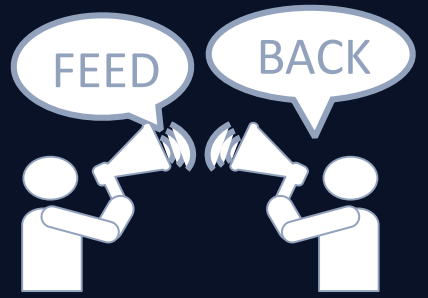
Conclusion and Next Steps

- Online Collaboration
- Additional DMU Feature
- Additional Data Formats
  - CAD
  - Simulation Data
- Desktop and Mobile
- AR and Tracking



Call for action

- Talk/Presentation Feedback
  - Felix.Jenkel@bmw.de
  - johannes.behr@threedy.io



- Instant3Dhub software
  - Request live demo
  - https://www.threedy.io/request-demo

  - Repository and documentation
  - https://www.threedy.io/software