



SMARTDIS

Smart Disassembly with a
Knowledge-based Automation System

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Automation & Control Institute

DI Timon Höbert

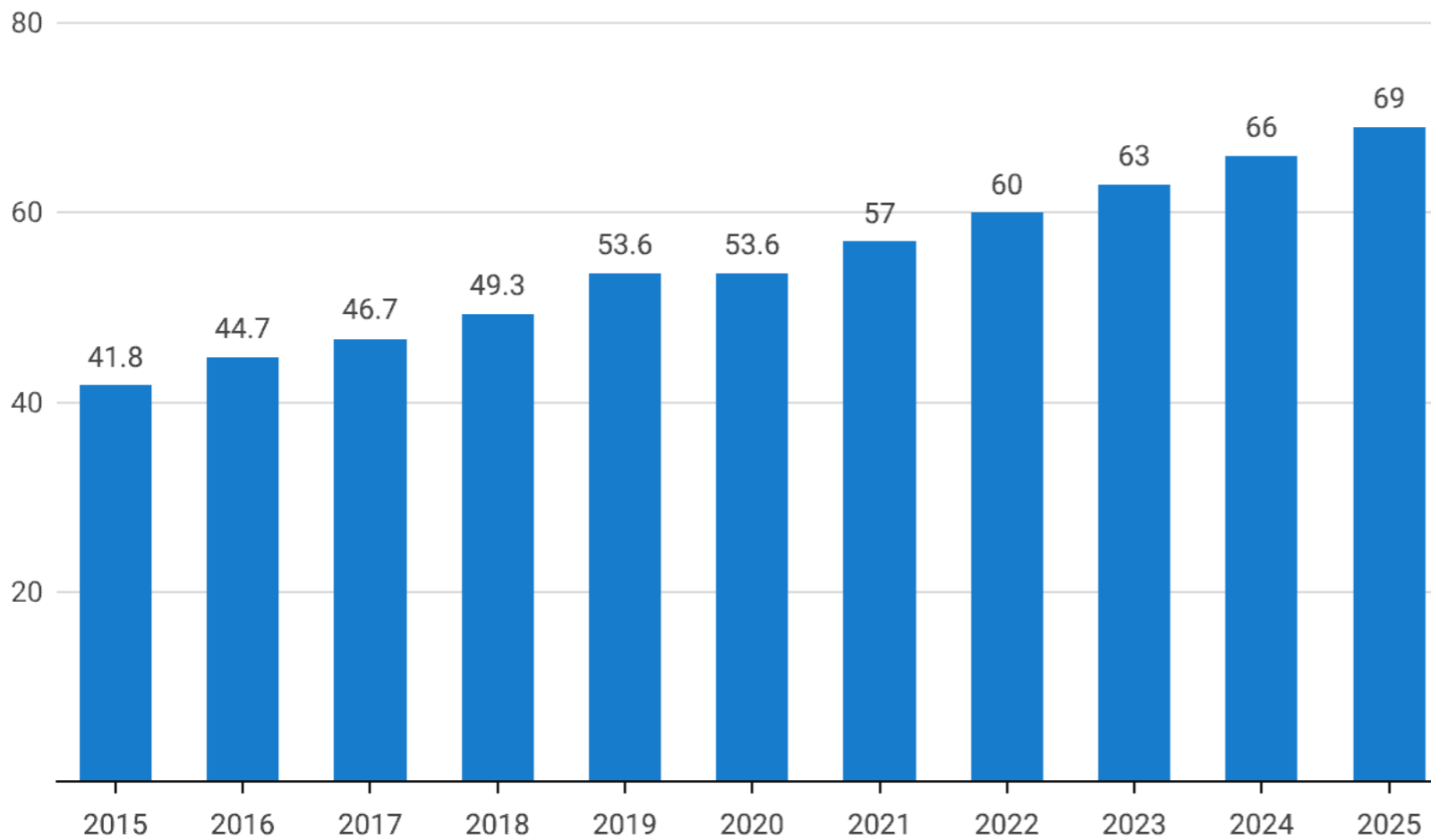


Researcher
Practical Robotics Institute Austria



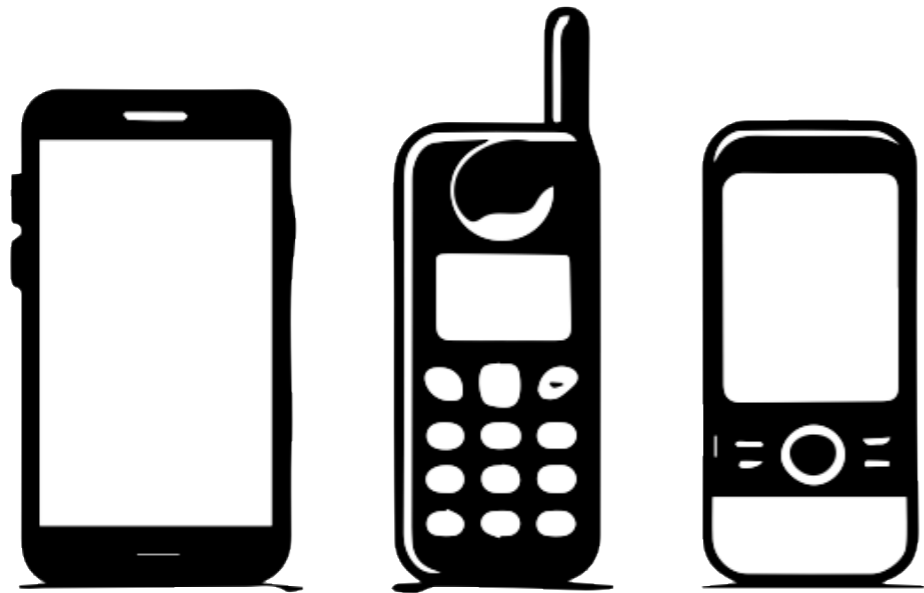
CTO & Co-Founder
bee produced GmbH

Global E-Waste [mio. tons]



Source: Market.us





1. Non-uniformity

Damages/Deformations

2.



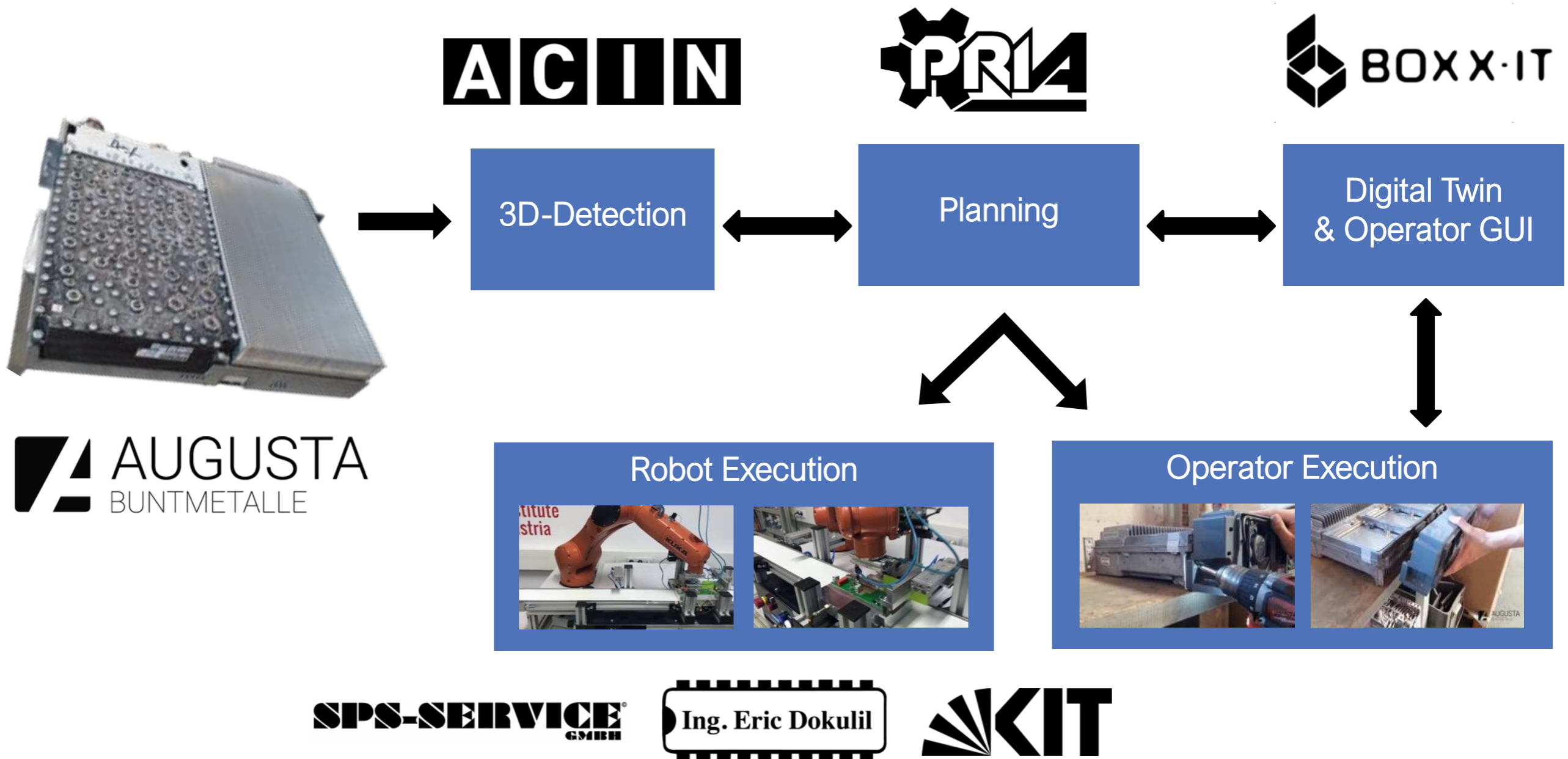
3. Cleanliness





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Disassembly Process

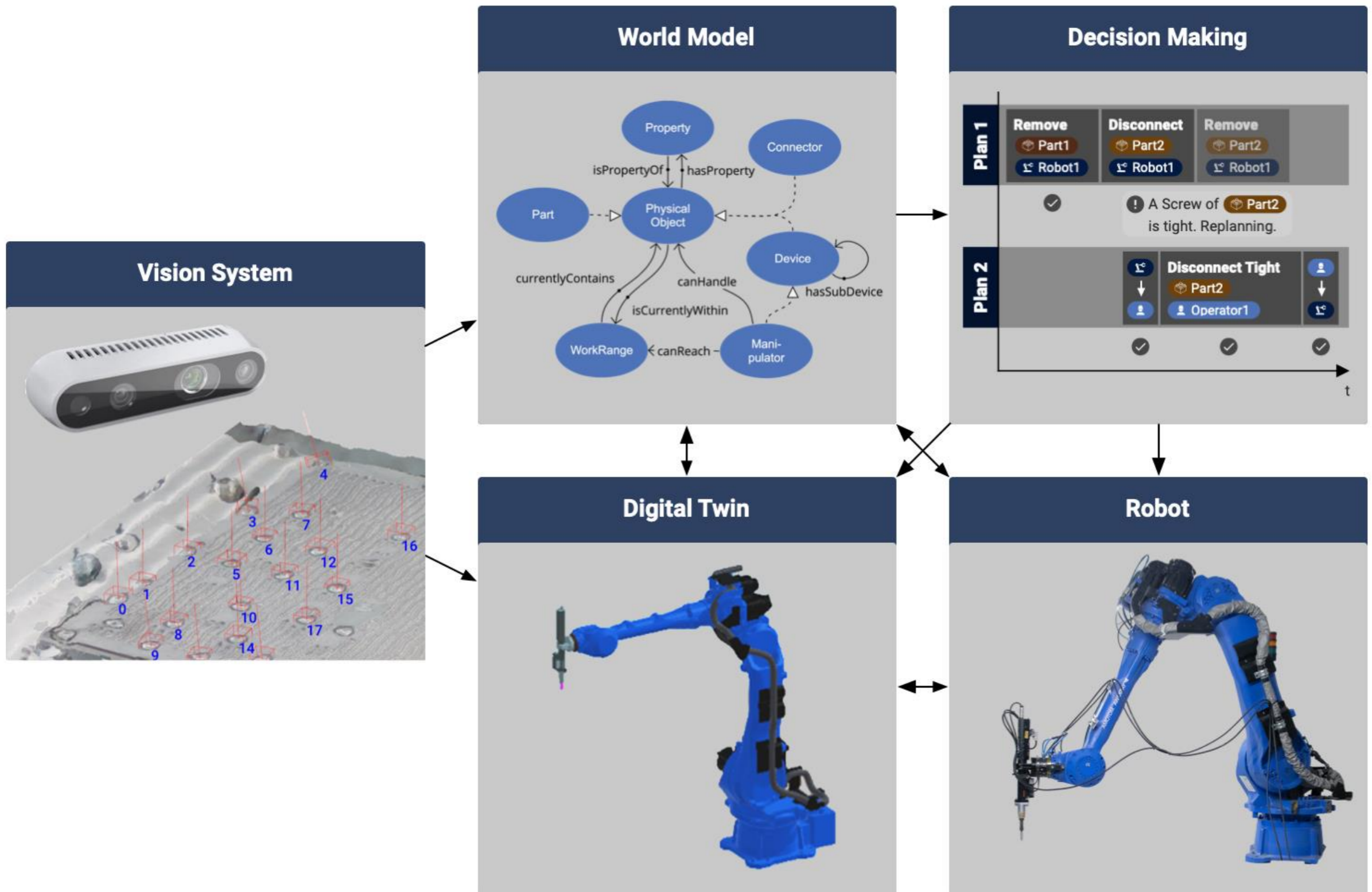


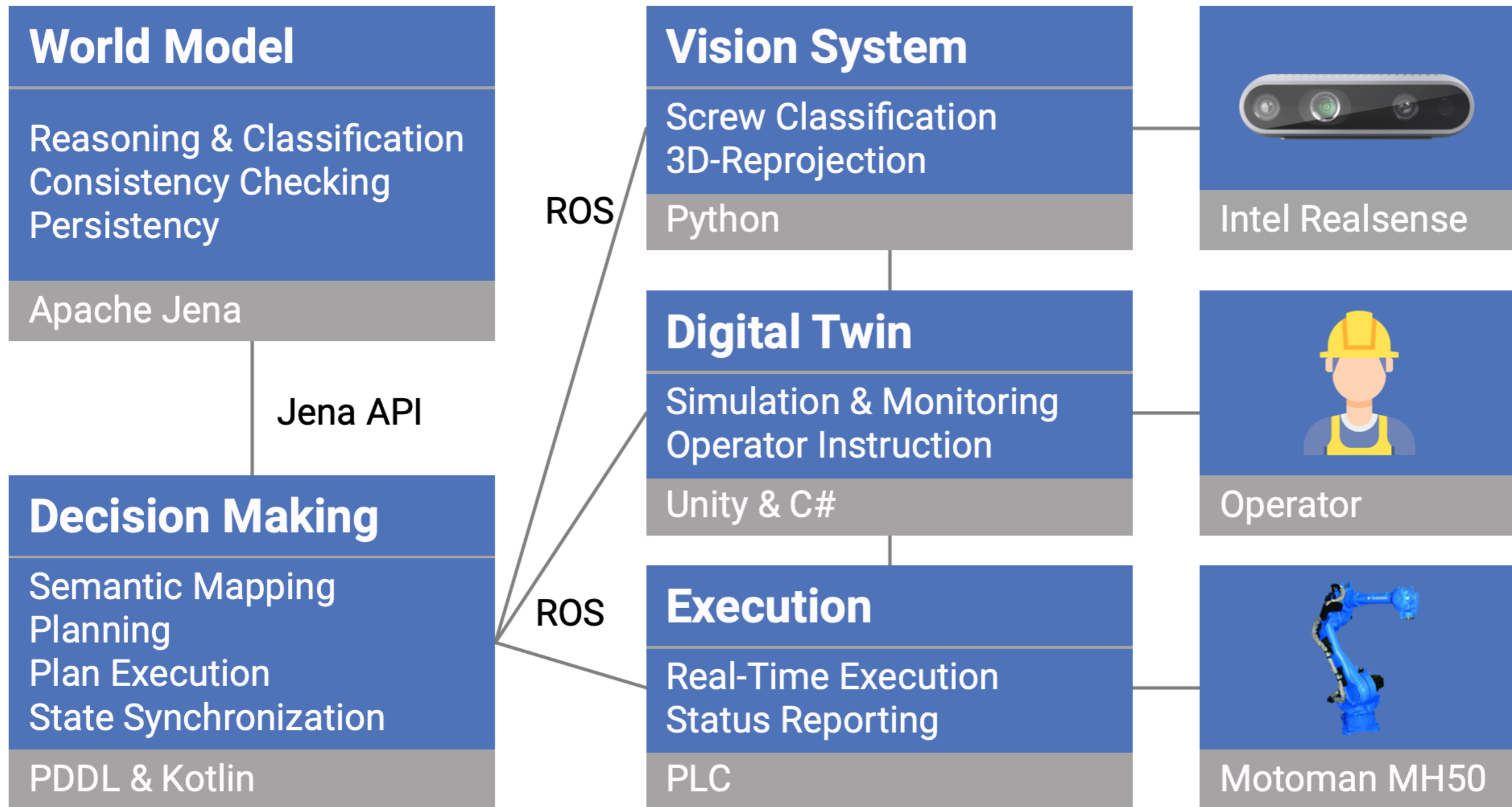
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SPS-SERVICE
GMBH

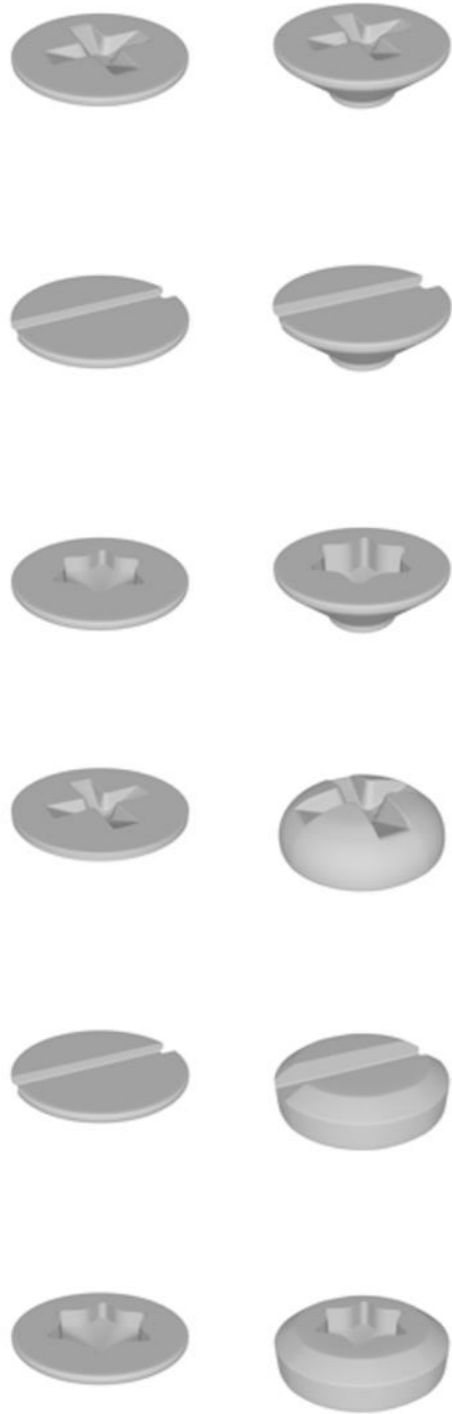
Ing. Eric Dokulil

KIT

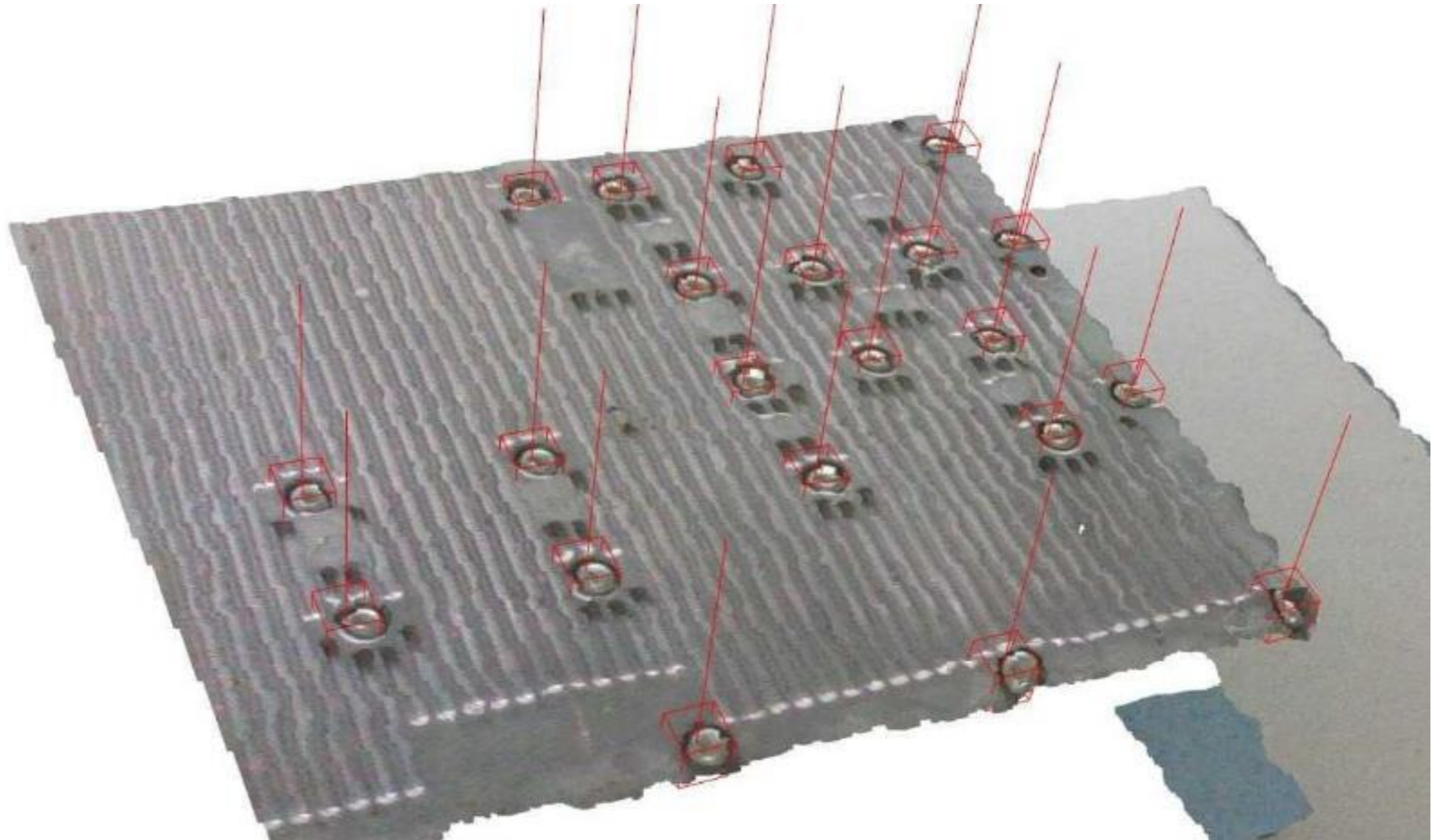




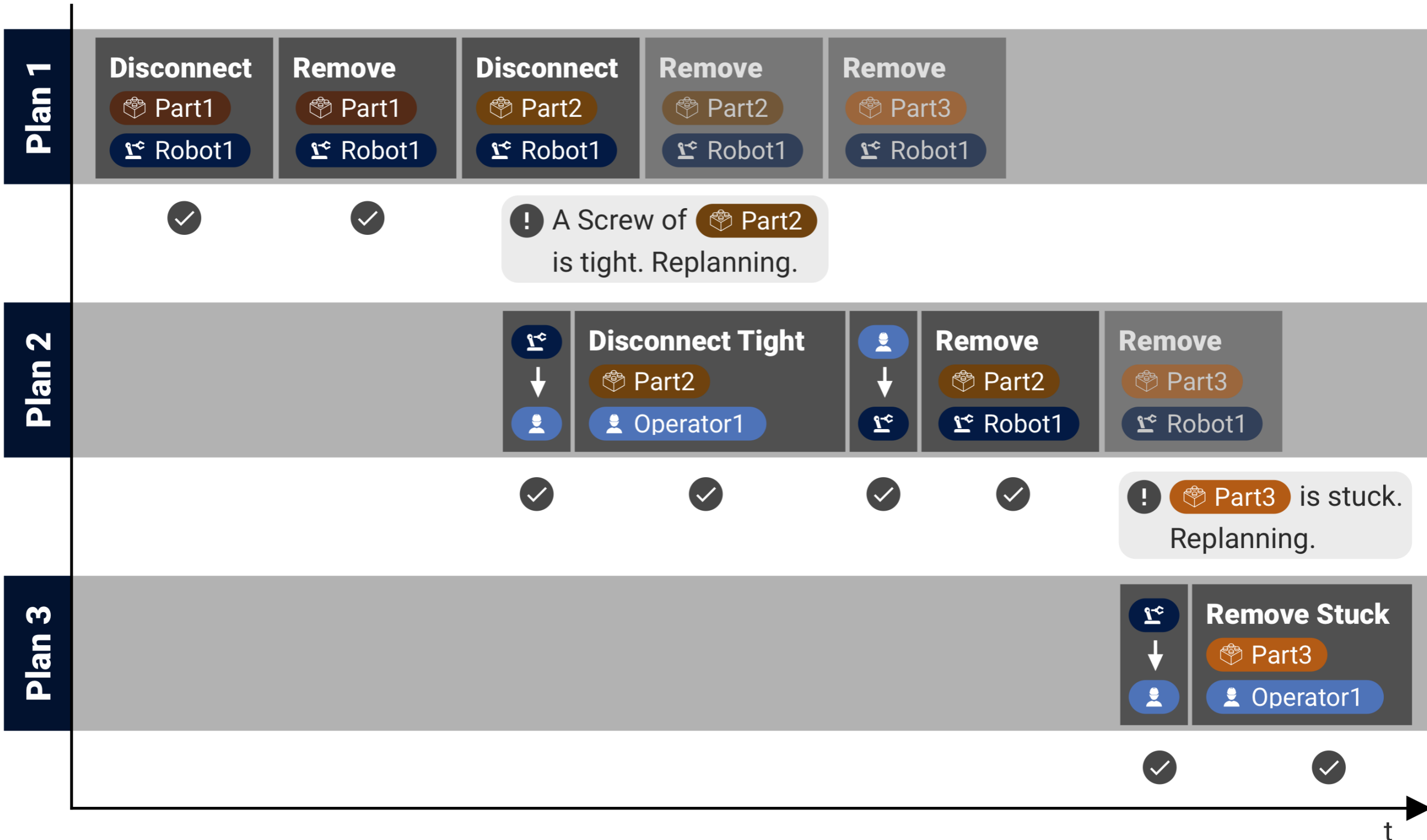
3D-Screw Detection Training



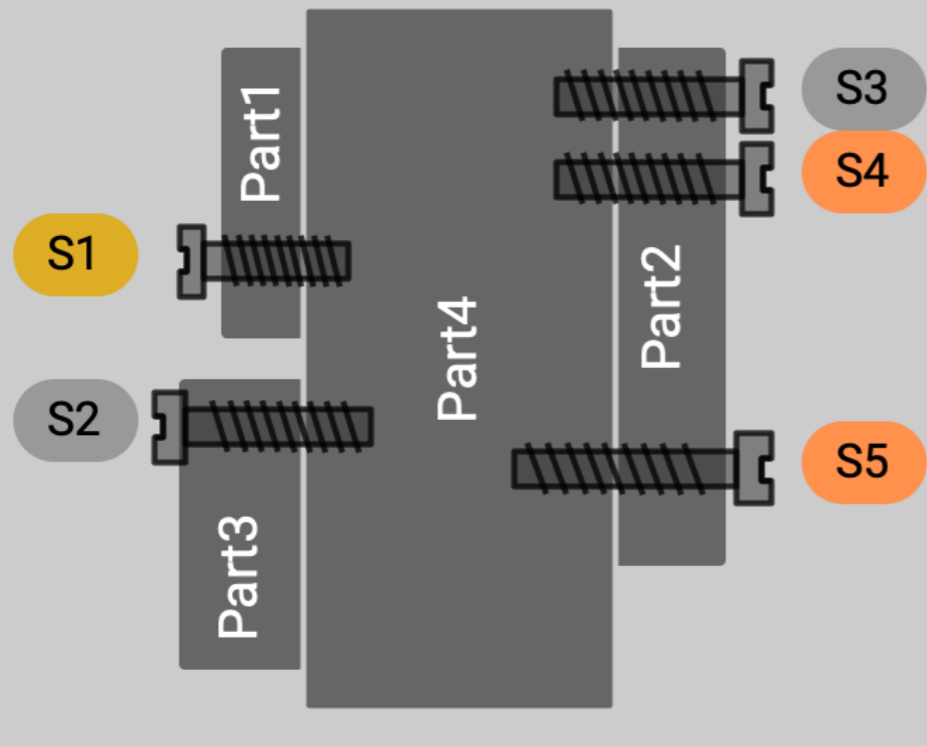
3D-Screw Detection Result



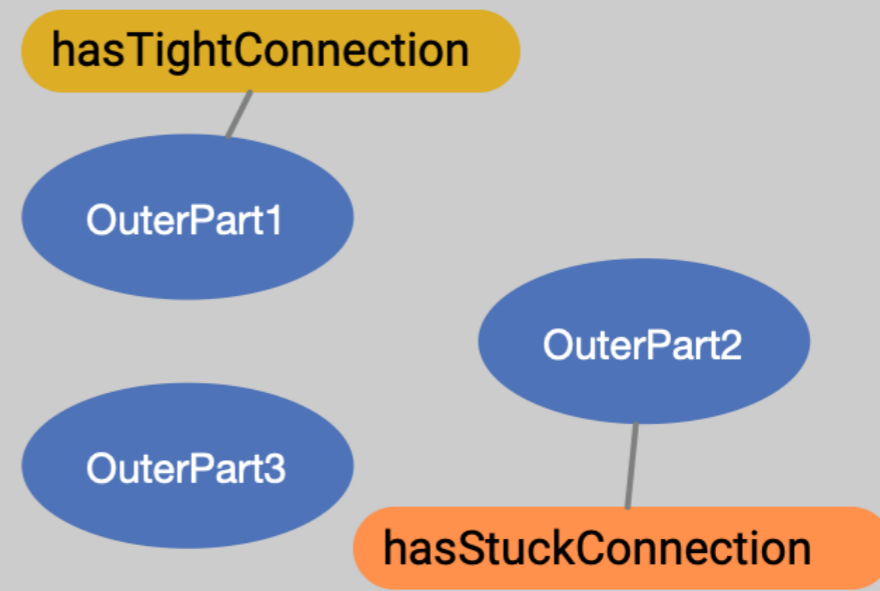
(Re-)planning



Disassembly Object



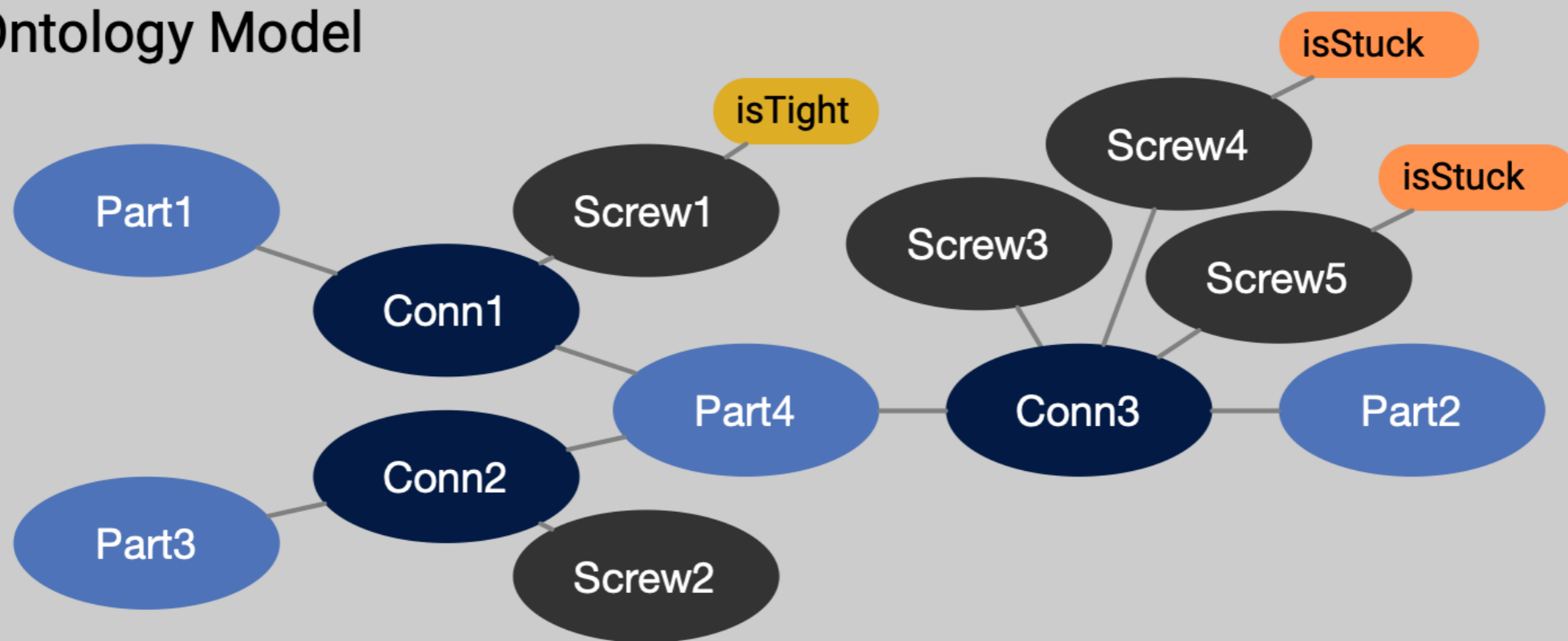
Minimized Planning Model

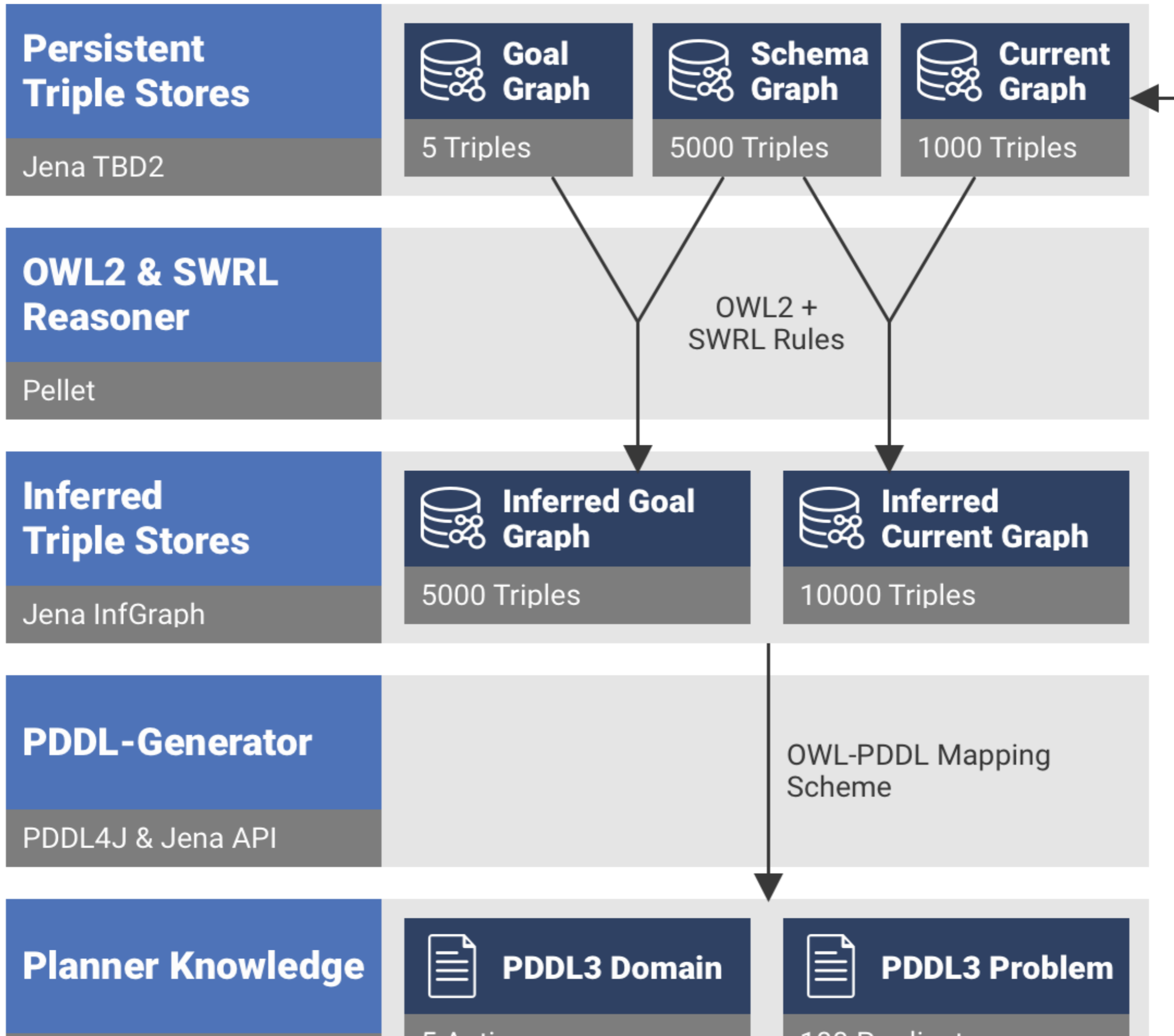


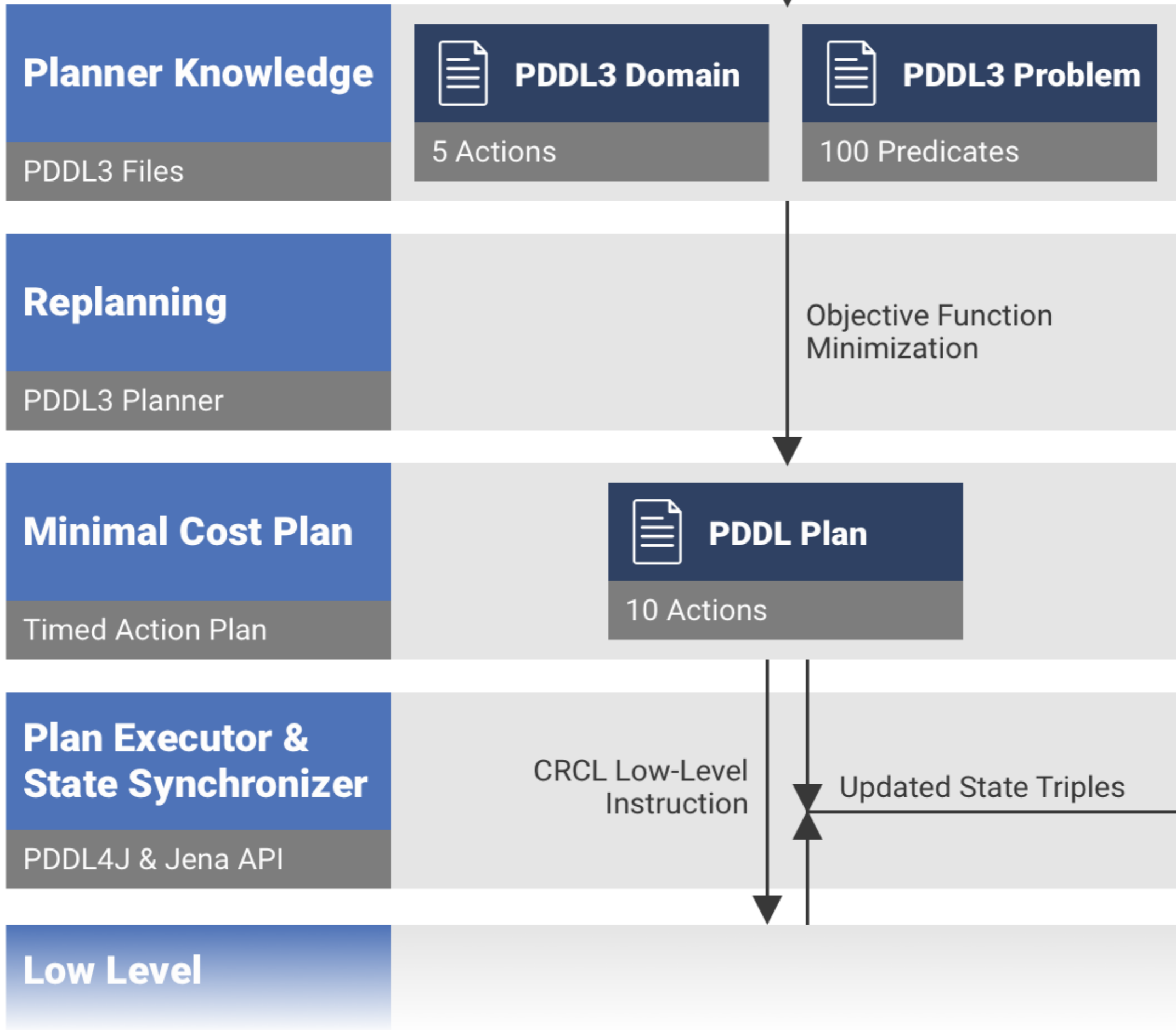
Vision System

SWRL-Rules

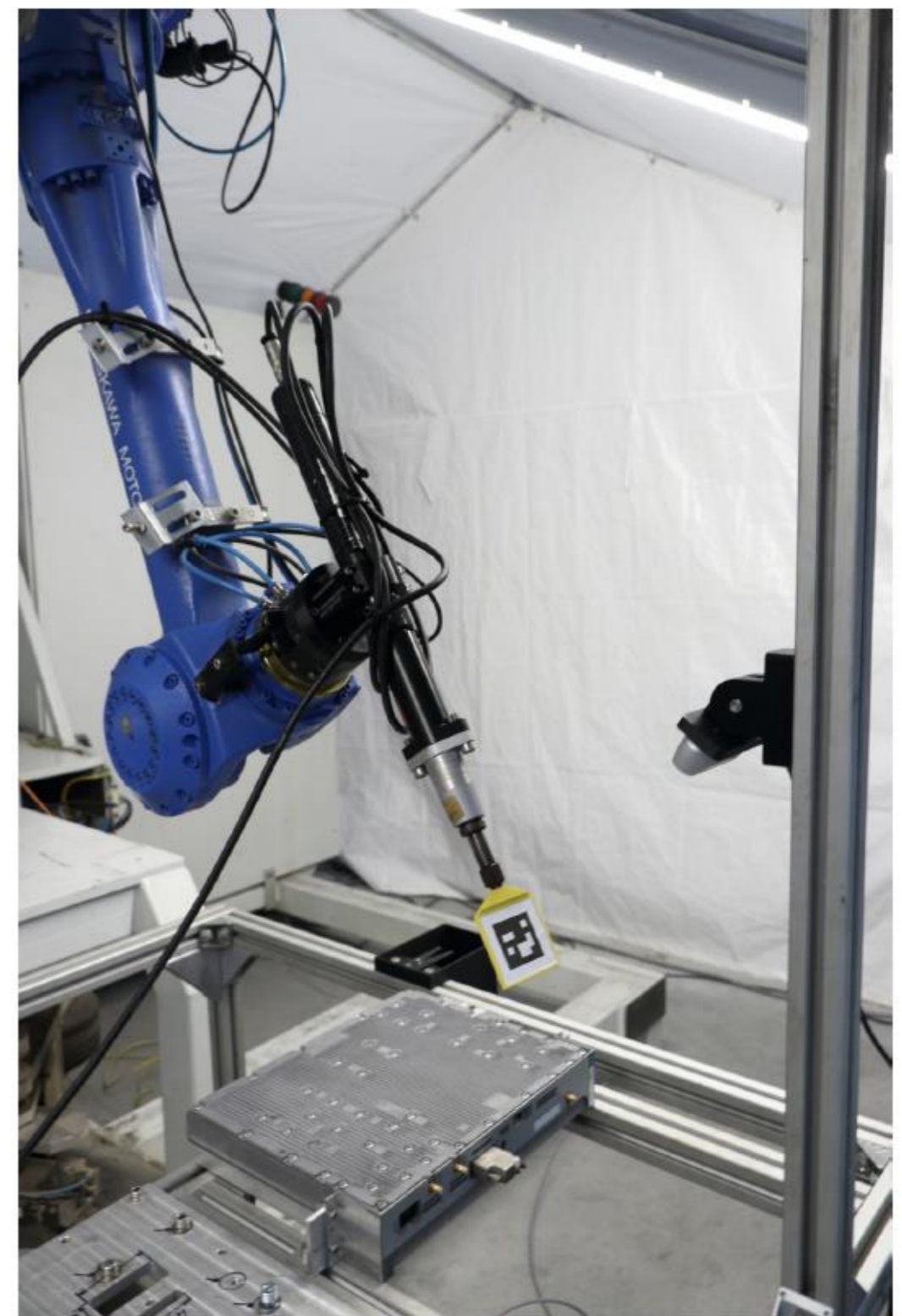
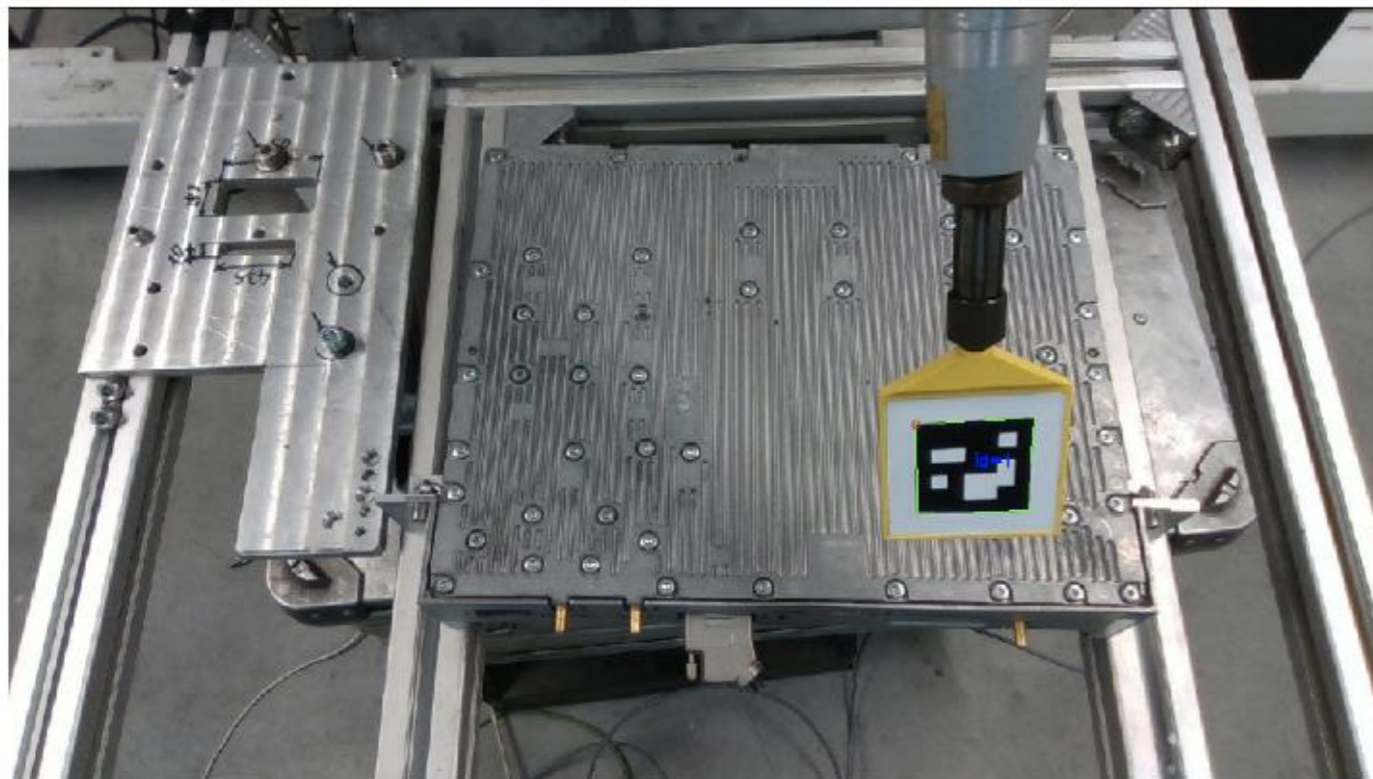
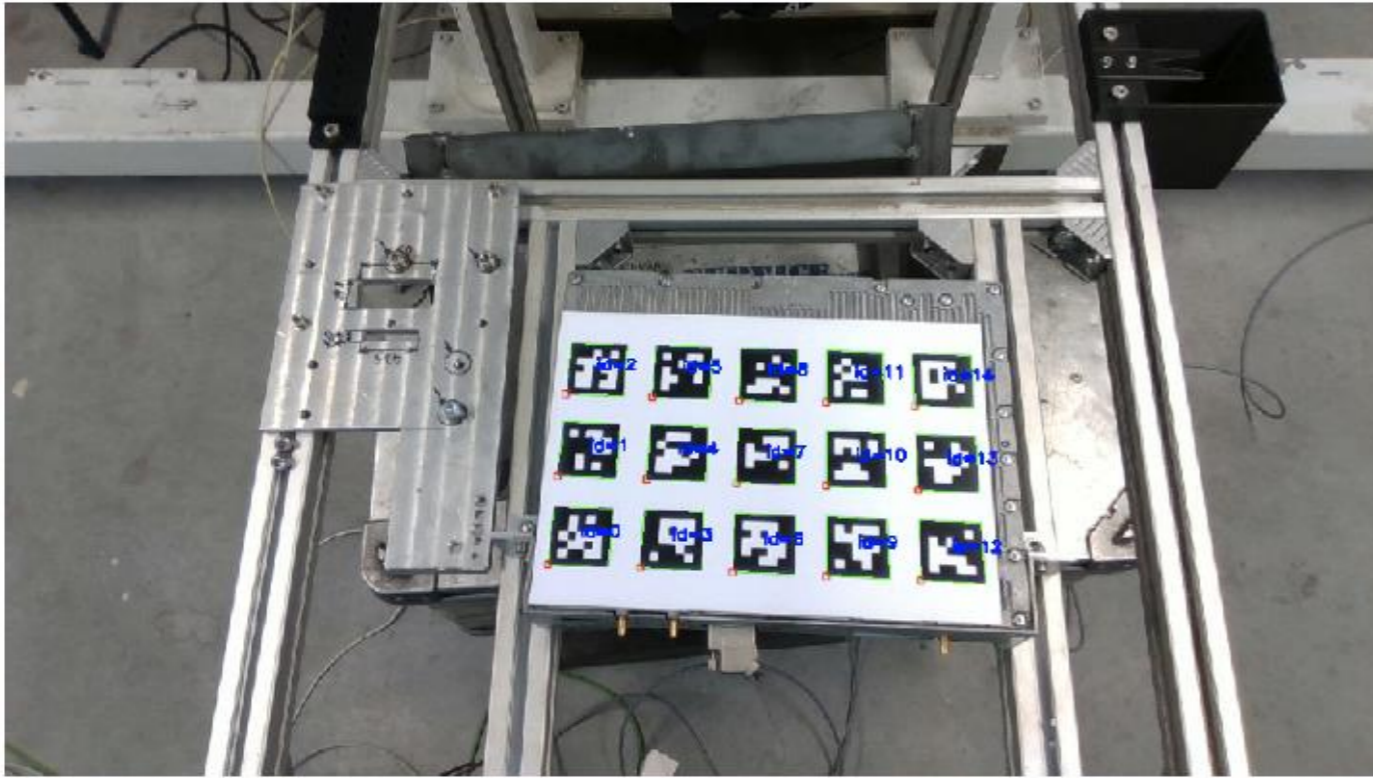
Ontology Model



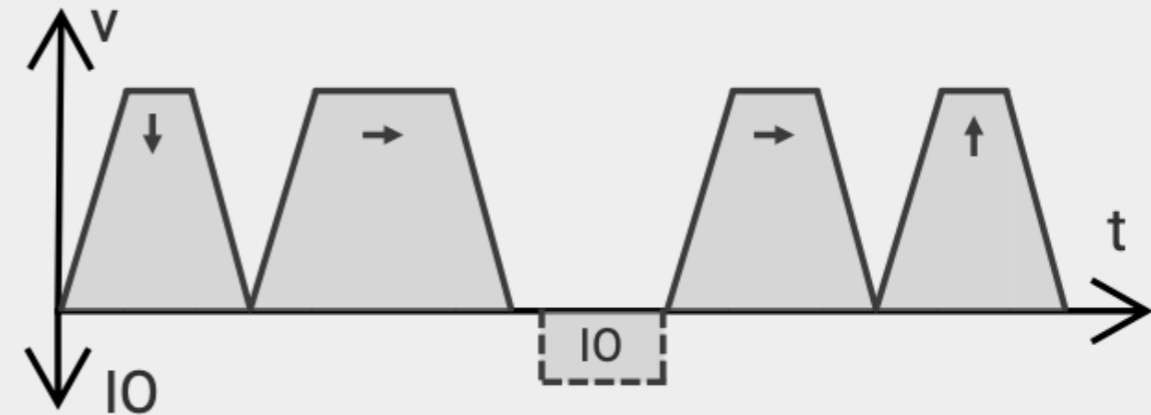
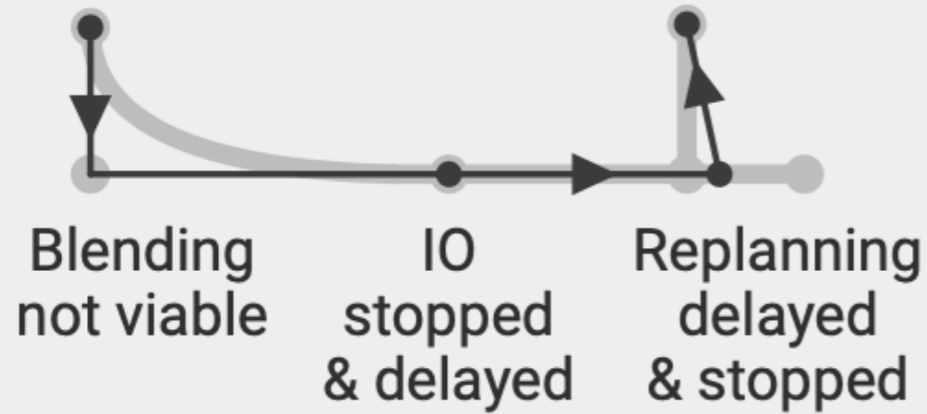




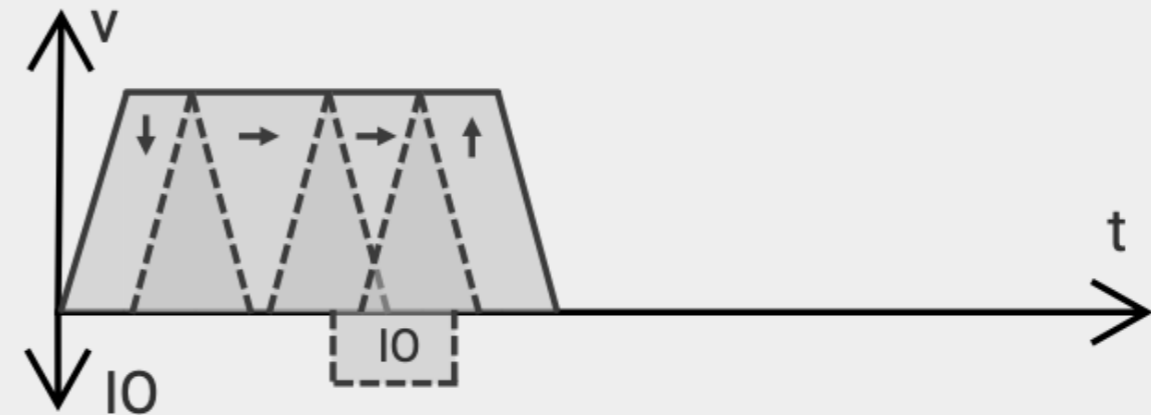
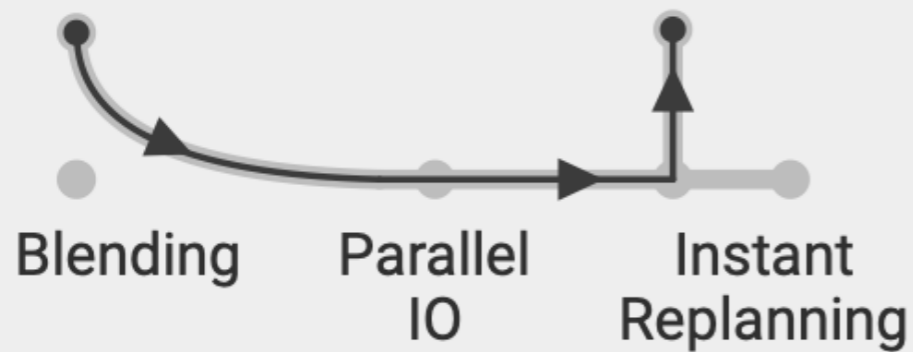
Optimal Calibration



Non-Continuous Motion



Continuous Motion with Parallel IO



	t [s]	\bar{P} [W]	$\Phi(P)$ [W]	W [Wh]
Rel. Difference	53,3%	99,1%	76,8%	52,8%

TOP LAYER

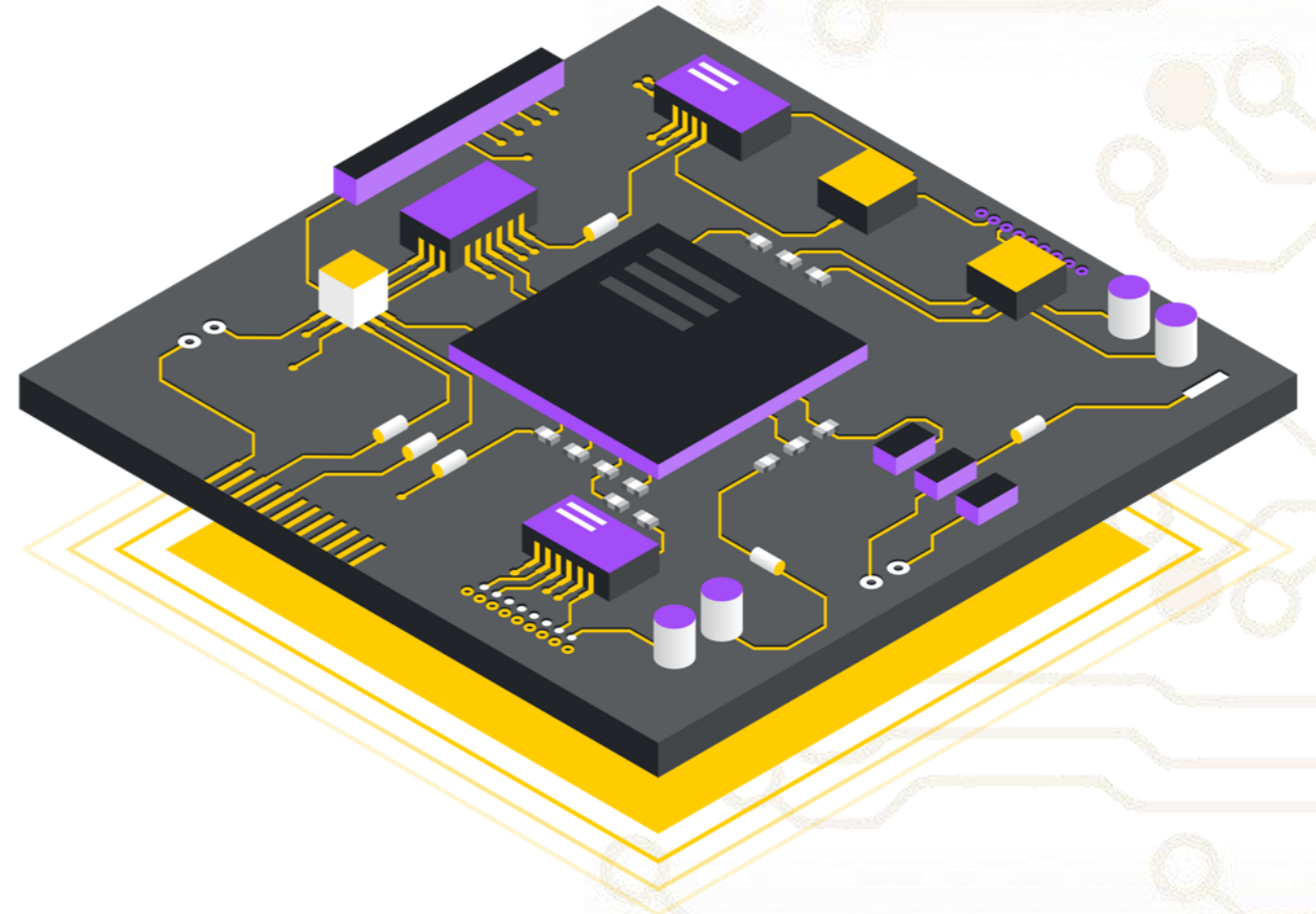
automatic



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No more searching for suitable manufacturers for your electronic product!

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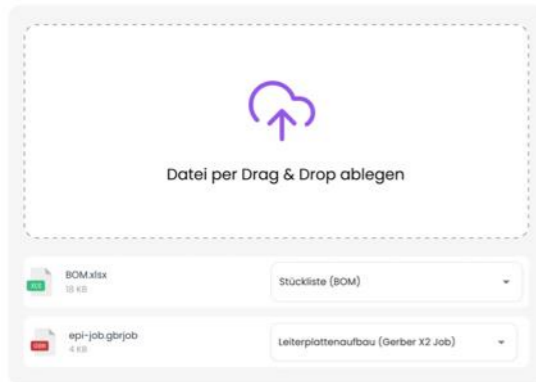


0€ for matching



100% data security

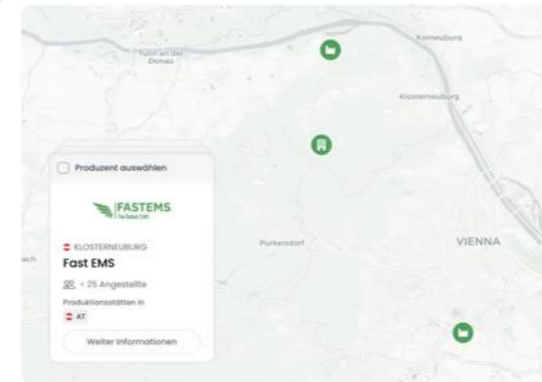
1



Upload and file recognition

Our marketplace automatically recognizes your uploaded Gerber files, component lists and other data and pre-structures them for the request for quotation.

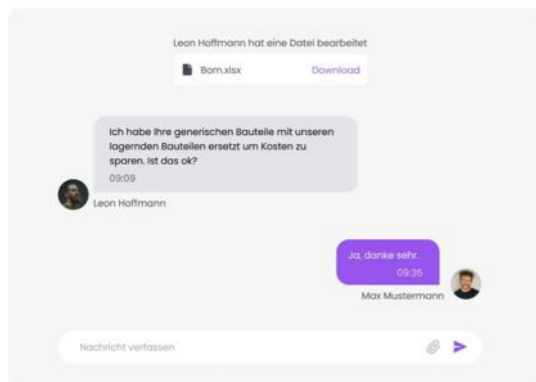
2



Matching with manufacturers

Our intelligent matching algorithm ensures that only manufacturers who really match your query are displayed in the search results.

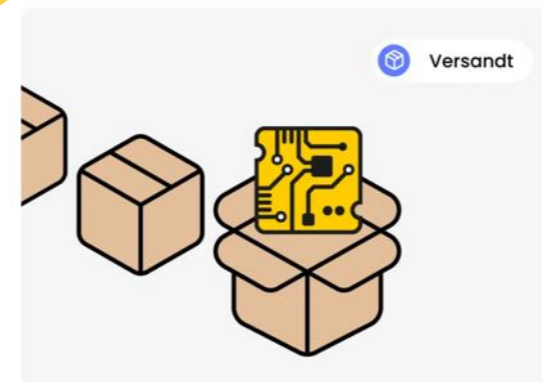
3



Detailed coordination and offers

You can use our integrated collaboration tool to clarify details with the manufacturers of your choice, compare their offers and place orders.

4



Assembled printed circuit boards

As soon as you submit an order, the contracted manufacturer gets to work and sends you your assembled printed circuit boards as quickly as possible.

Thank you for your attention!

Questions?

timon.hoebert@beeproduced.com



vincze@acin.tuwien.ac.at