



MANUFACTURING SME AND CHALLENGE

D-Cube (<http://www.d-cube.eu>) is a spin-off company of the Centre for Research & Technology Hellas (<https://www.iti.gr/iti/index.html>)

D-Cube's vision is to deliver state-of-the-art information technology solutions, targeting diverse markets and technologies.

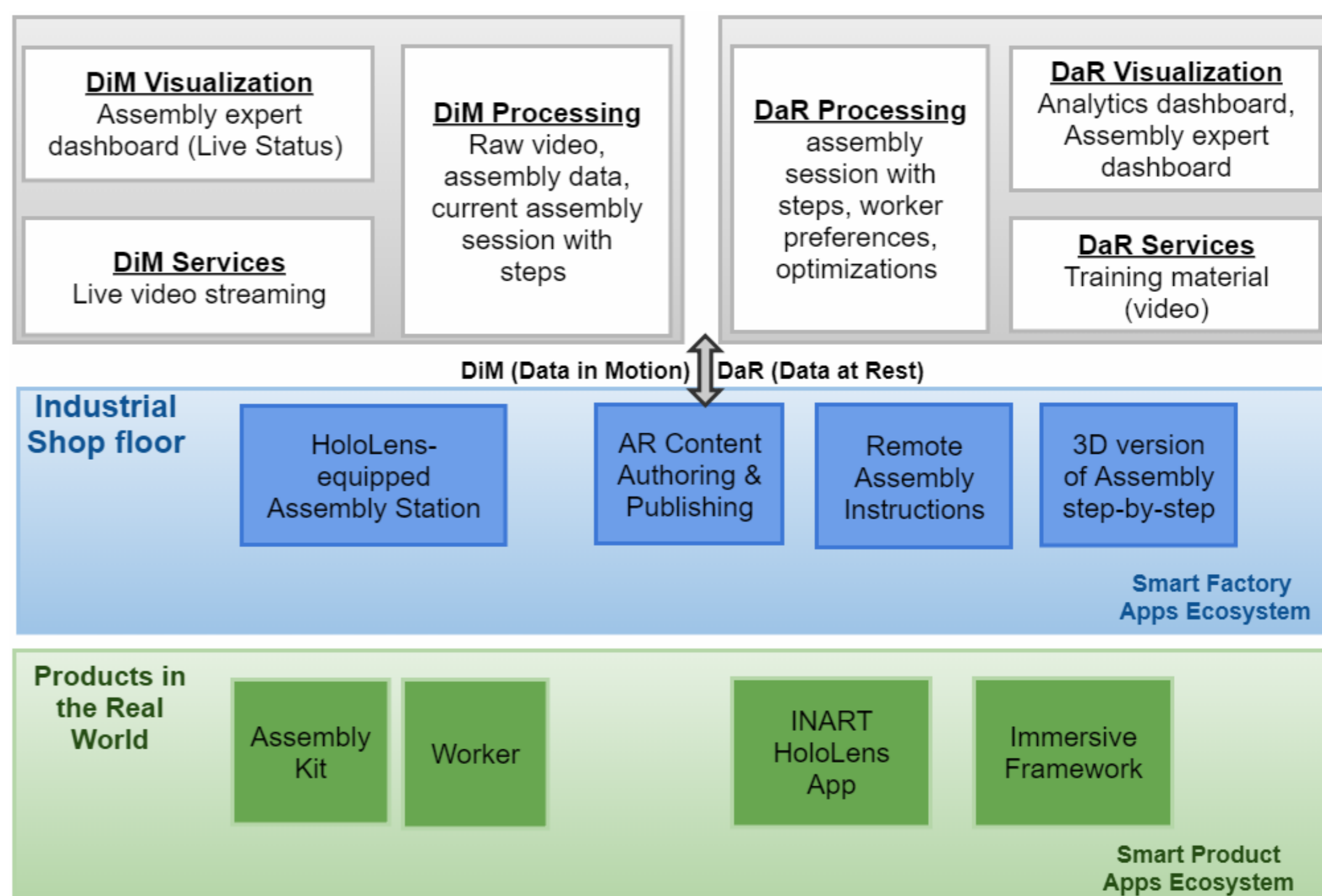
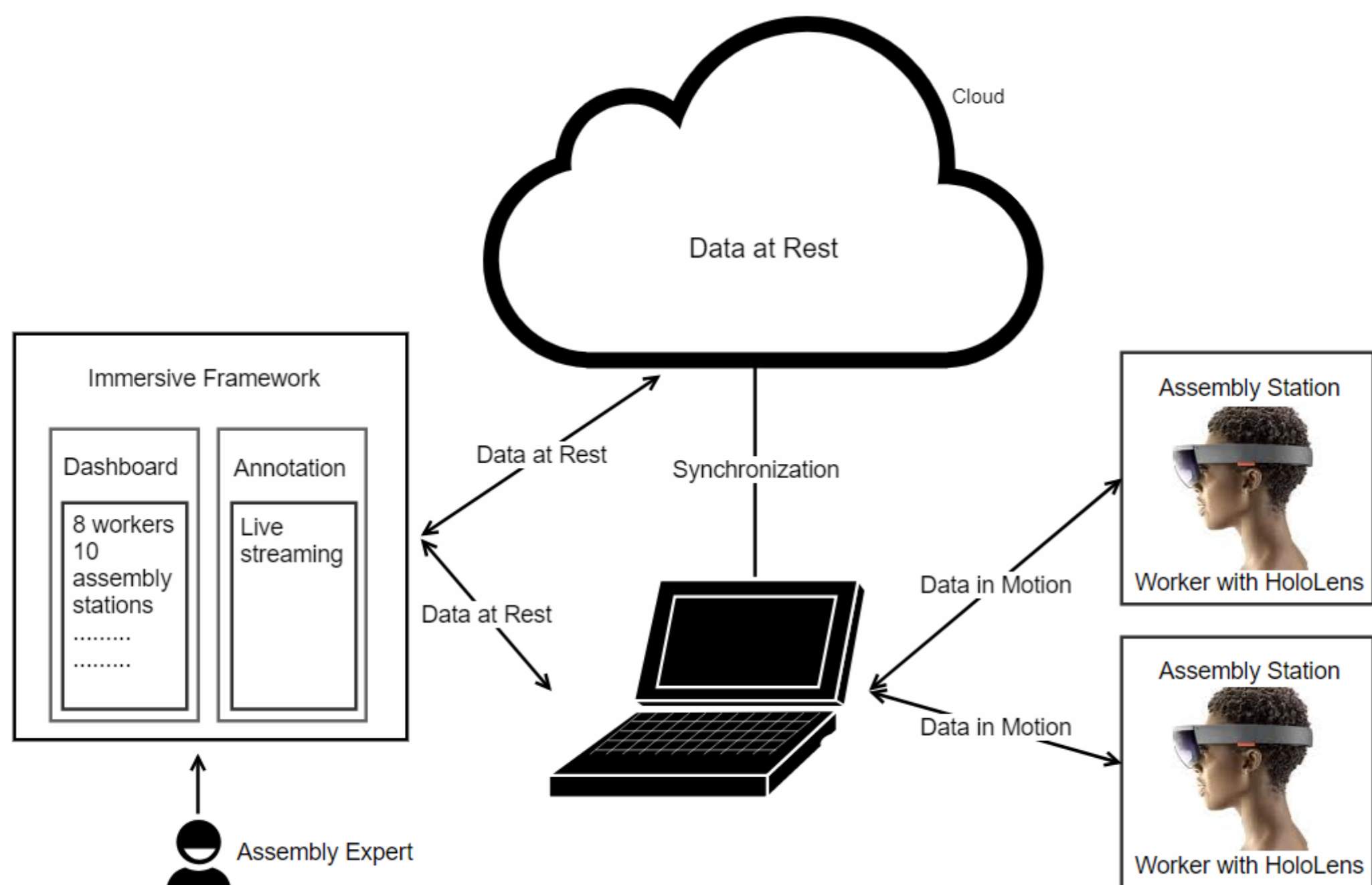
D-Cube plans to exploit the developed solutions as part of its Immersive Industry mission, to utilize computer vision algorithms and mixed reality applications to enable factories of the future via multi-sensor networks.

SOLUTION: ARCHITECTURE AND COMPONENTS

The INART experiment proposes and demonstrates a novel way of Augmented Reality (AR) guided assembly in a manufacturing environment. An AR version of the physical object is attached and presented to the operator as a sequence of operational steps.

INART consists of two major components:

- The **AR HoloLens Application** that runs on the Microsoft HoloLens device and,
- The **Immersive Framework** that acts as the backend platform for recording and sharing data.



INART aims at:

- Trending developments in industrial AR application on the MIDIH architecture in the context of both Data in Motion (DiM) and Data at Rest (DaR).
- Changing the way an assembly is presented to the workers as well as the way workers and supervisors interact in an immersive way in the manufacturing process and generating positive performance indicators.
- Increased workforce efficiency and error reduction.

BENEFITS AND LESSON LEARNT

Based on the experiment results:

- ✓ AR guided assembly is a technology that drastically improves both the assembly training and the operation of assembly lines.
- ✓ The technology is well appreciated by the users both workers and supervisors, which is critical for the acceptance of the technology and the final adoption.
- ✓ Significant improvements regarding ease of use, enjoyment and special training courses are key factors for the acceptance of the technology.

OUTLOOK

- An experiment was conducted at the AIC (Automotive Intelligence Center) didactic factory in Bilbao to test the INART solution.
- The INART solution was presented to companies where D-cube foresees business opportunities.

The INART solution as part of the MIDIH ecosystem, provided valuable conclusions and considerations on the marketability of AR assembly technologies and products.