DM-IF Top 10

The following is a list of technologies that can be investigated by the DM-IF. They are not listed in any particular order, and there is **NO** expectation that we can afford to pilot them all. Each topic is divided into three sub-topics so that items can be moved, if necessary, after a ranking and cut-off has been determined.

- On machine GD&T measurement
- QIF Reporting
- Digital Twin reporting

- Computation of optimal speeds and feeds
- Tooling optimization
- Workpiece path planning

- Just in time collision detection
- Re-entry path planning
- Robot loading

- CMM GD&T measurement
- CAD data exchange
- CAM data exchange

- Robot milling and drilling
- Mill Turn operations
- Grinding, water jet cutting etc.

- Assembly measurement
- Feature detection
- Feature machining

- Positional error detection and correction
- Dimensional error compensation
- Closed loop machining

- Large scale visualization
- Detail visualization
- Web visualization

- Digital thread for digital twin (Fig.1)
- STEP, MTConnect and QIF integration
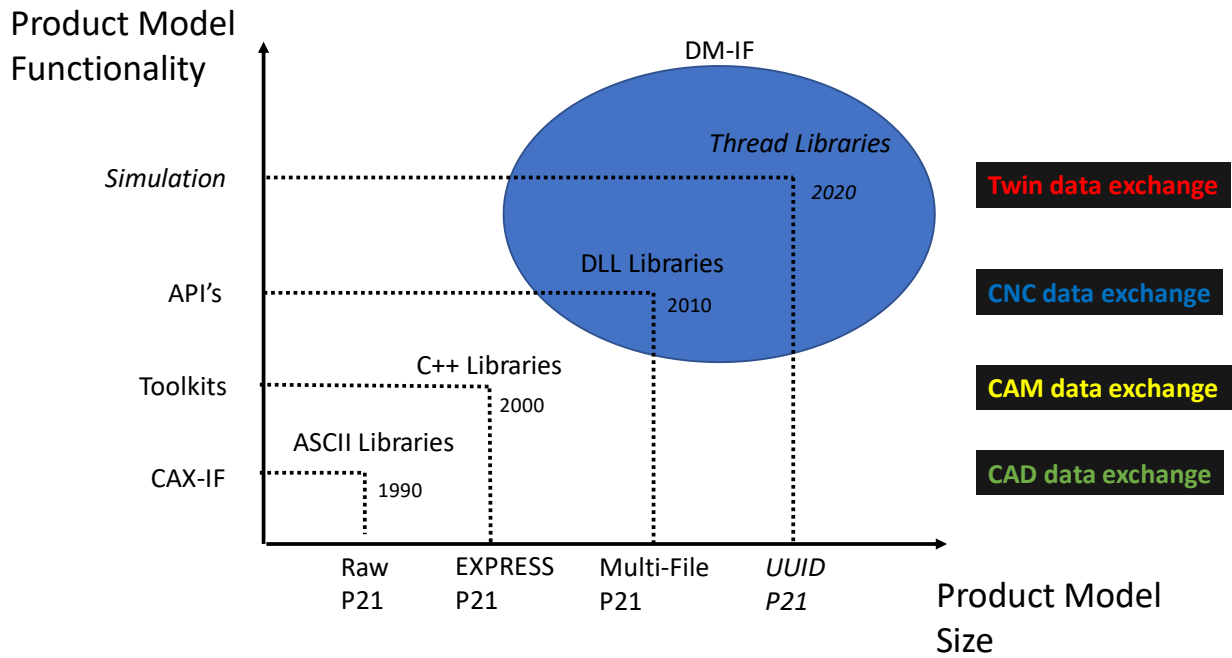- UUID registration

- Supply chain communication
- Digital signatures
- Security and Cryptography

Figure 1 – Product Model Technologies