Digital Twin Manufacturing

Fast, Flexible and Accurate

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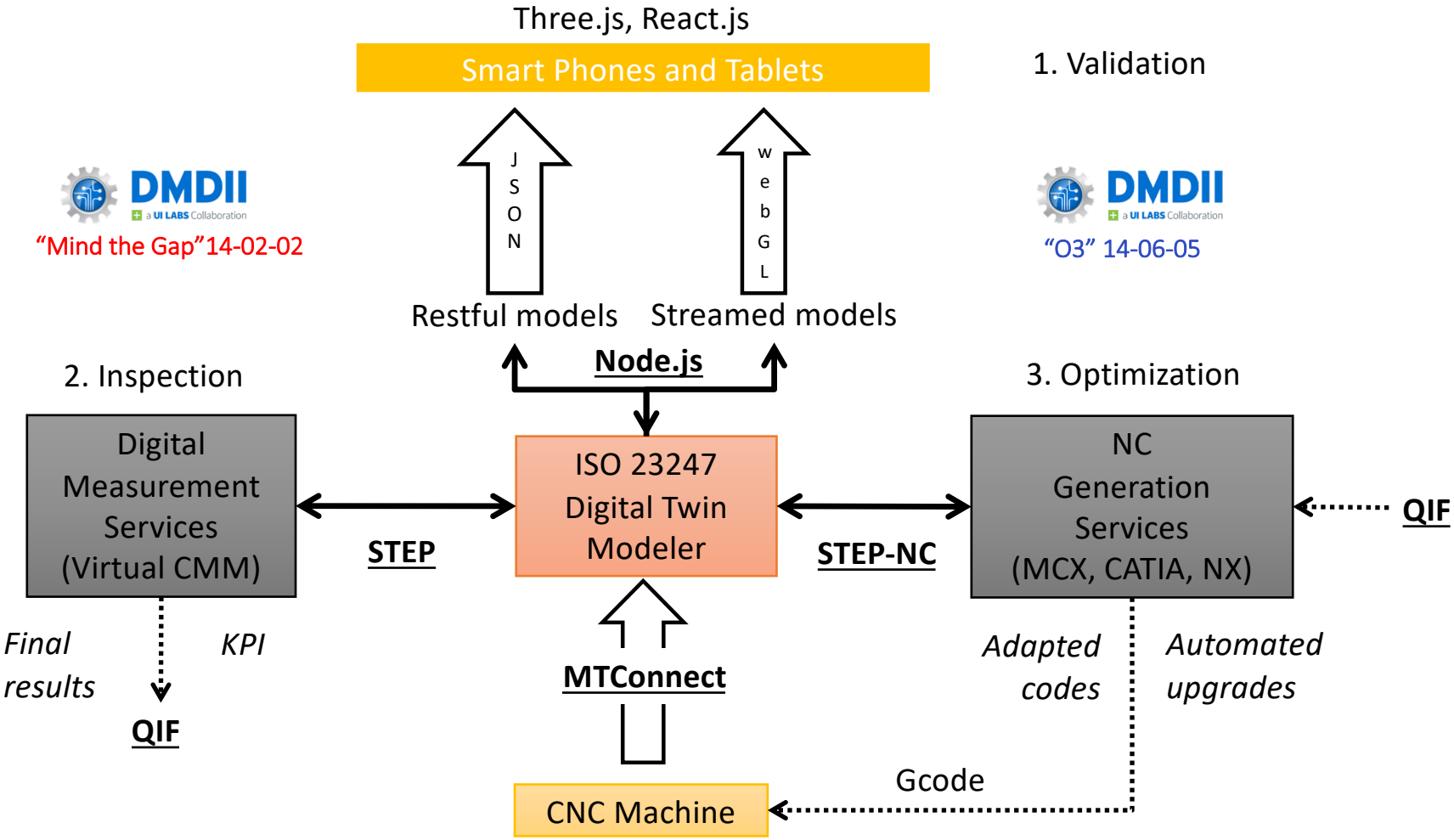
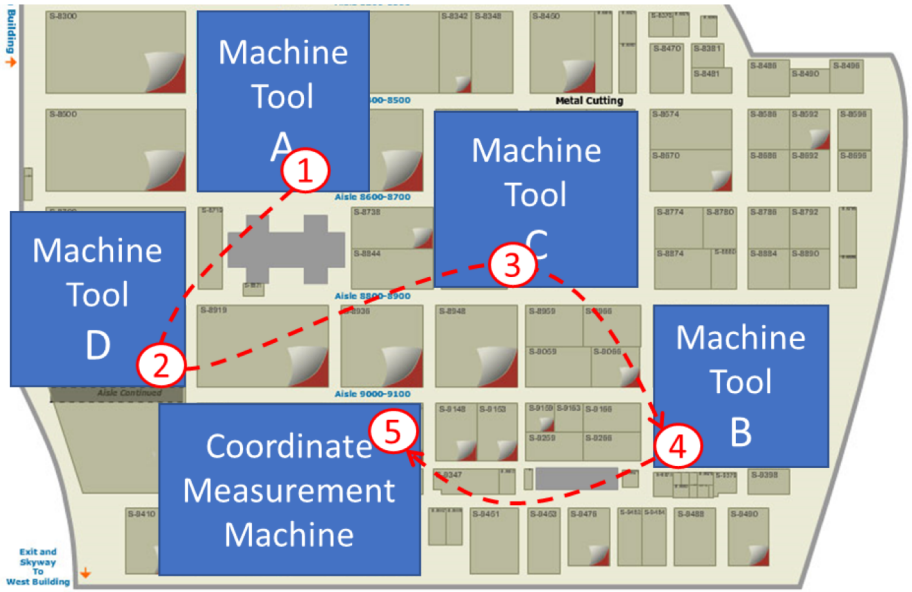
Digital Twin framework – ISO 23247



Applications

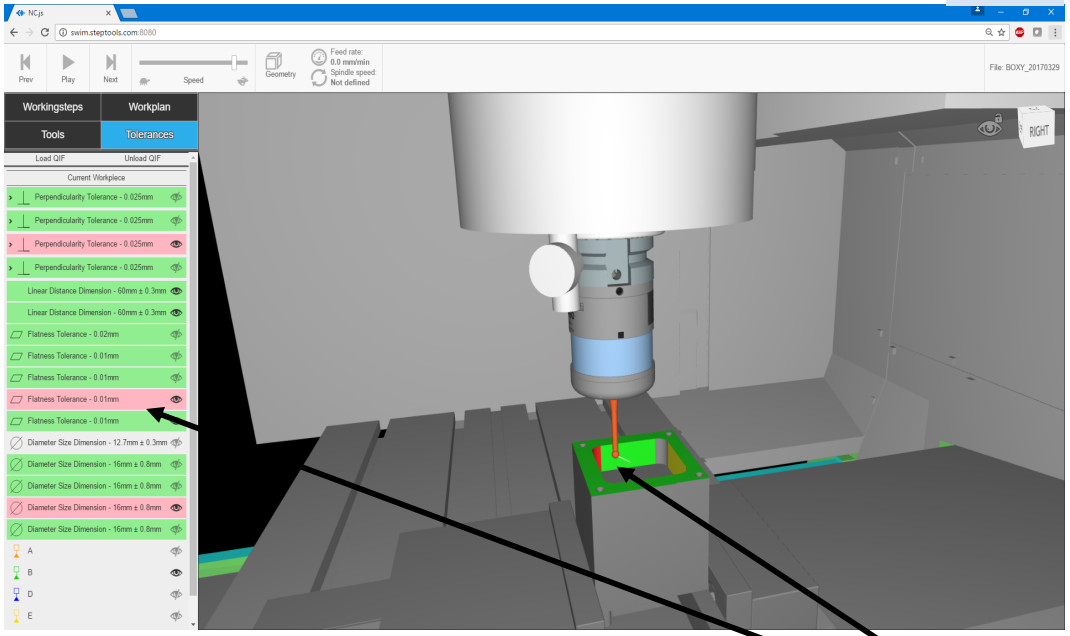
- In-process measurement
  - Measure on the machine
- “Self driving” tools
  - Optimize feeds after tool changes
- Error free manufacturing
  - Prevent collisions on restarts
- Faster life cycle
  - Communicate issues and opportunities across the enterprise

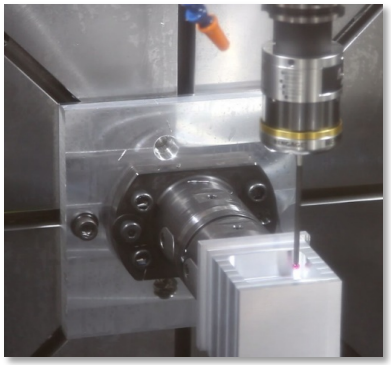


Demonstrations at IMTS 2018 and JIMTOF 2018

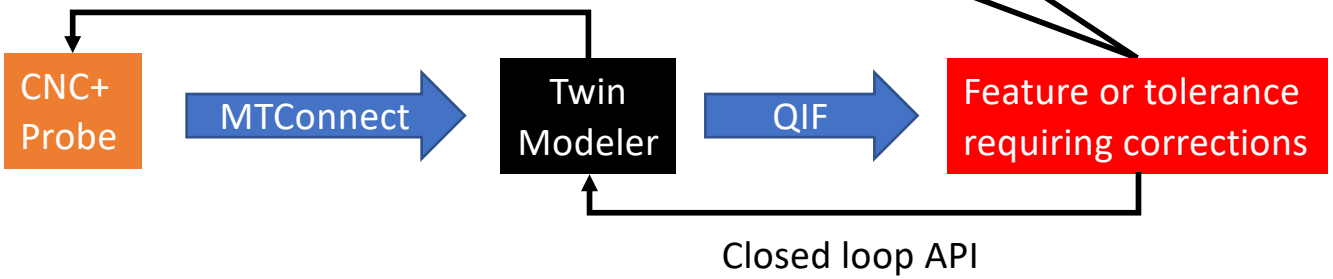
On-machine measurement

NC.js





Just in time codes

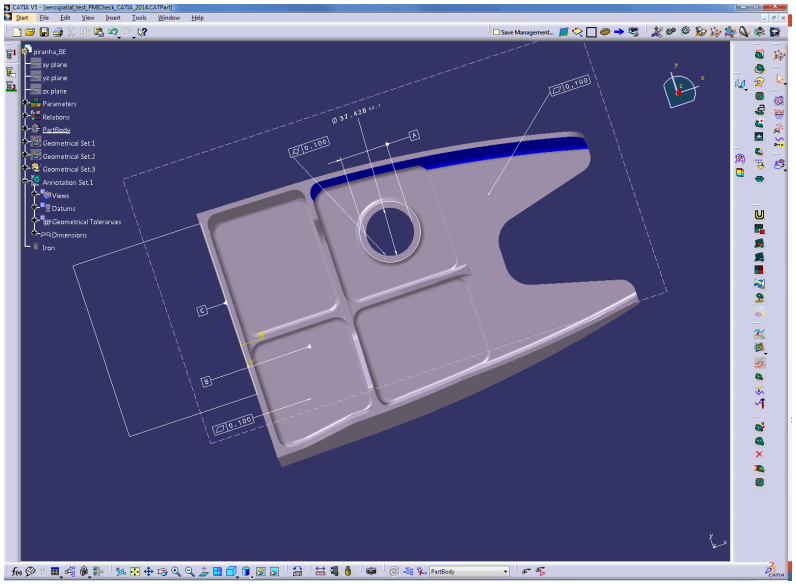


- Green good
- Red bad
- Yellow good and bad

IMTS and JIMTOF participants

- Participants and observers (* = contributing observer)
  - Organizations
    - ISO TC184/SC4
    - OMAC
    - NIST
    - AMT/MTConnect
    - DMSC/QIF
  - Technology Providers
    - STEP-Tools, Inc.
    - Dassault *
    - Autodesk *
    - Capvidia
  - Cutters/Holders
    - Sandvik Coromant
    - ISCAR *

CATIA



- Machine Tool Suppliers
  - DMG Mori (IMTS, JIMTOF)
  - Hyundai (IMTS)
  - Makino (JIMTOF)
  - Okuma *
- Metrology
  - Mitutoyo
  - Renishaw
- End Users
  - Boeing
  - Airbus

Participants add value to STEP, MTConnect or QIF