# Data Interoperability Standards Utilization Survey Industry Extension

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2024


Jamie Yedinak

# Presenters Biography



Jamie Yedinak

Background:

- 19 years at the Boeing Company as Mechanical Structures Engineer, Process Engineer, and Information Technology Engineer. Held positions of Technical Lead Engineer, First Line Manager, and Chief of Staff.
- Experience in Product Standards definition and utilization, Product Data Interoperability, Product Lifecycle Management, Productivity Improvement, Optimal Cost Development and Implementation, and Finance Estimating.
- BS in Materials Science Engineering from the University of Washington

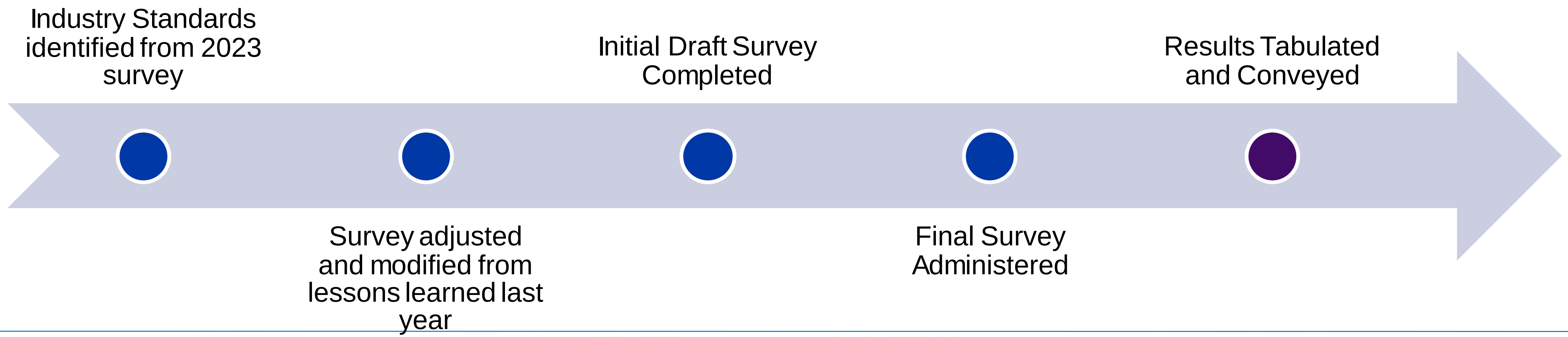
Current Assignment: Interoperability Standards Engineer, Enterprise Interoperability Standard Team supporting Digital Transformation at the Boeing Company.

Interests: Woodworking, most sports (Go Huskies!), Skiing, Playing Music (Piano, Guitar, Production), coaching

# Standards Utilization Survey Process – How we administered the survey

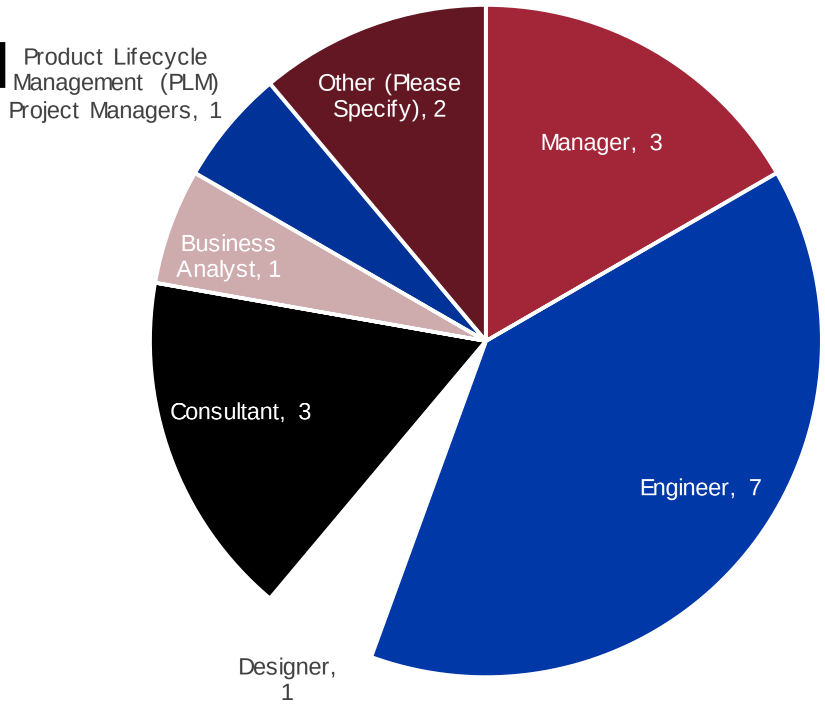


- **Aerospace & Defence Product Lifecycle Management Action Group (A&D PLM AG) Standards team identified superset of standards in the aerospace lifecycle span**
- **Superset of standards were discussed and analyzed to down-select final subset of standards on utilization across team membership**
- **A&D PLM AG – Standards team distributed survey with 2 Survey Campaigns: (1) Targeted to GPDIS Opt-In Participants, (2) Targeted to CIMdata Industry Companies**



- **Rough Statistics**
  - **4423 Emails Sent**
  - **Click to Open Rate (CTOR)[Industry Average]: 20.2% [12.67%]**
    - **Click Through Rate (CTR)[Industry Average]: 13.5% [4.37%]**
      - 61 Started Responses (10.2% Survey Engagement Rate)
        - 18 Completed Responses (29.5% Completion Rate)
  - **12 Minute Single Session Average Response Time**

Response Population



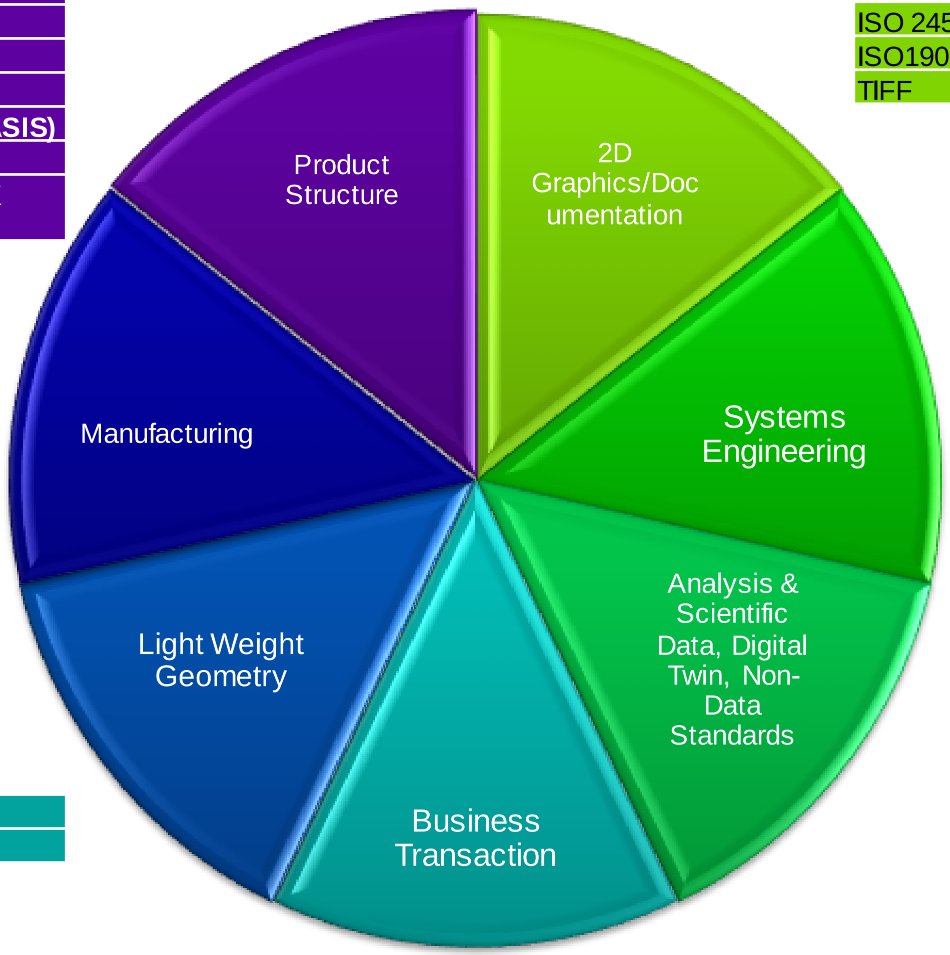
# Standards Categories Alignment to Industry Standards



- AP210
- AP214
- AP232
- AP235
- AP239 / PLCS (OASIS)
- AP242 (ed2/3)
- EN_NAS9300-XXX LOTAR

- ISO 24517 PDF/E
- ISO19005 PDF / A
- TIFF

- QIF
- ASTM F42 aka AMF or STL-2
- STL
- DMIS
- AP238
- 3MF




- MOSSEC (STEP AP243)
- AP233
- Modelica
- FMI (Functional Mock-up interface)
- SSP (System Structure and Parameterization)
- OSLC
- REQIF
- SysML

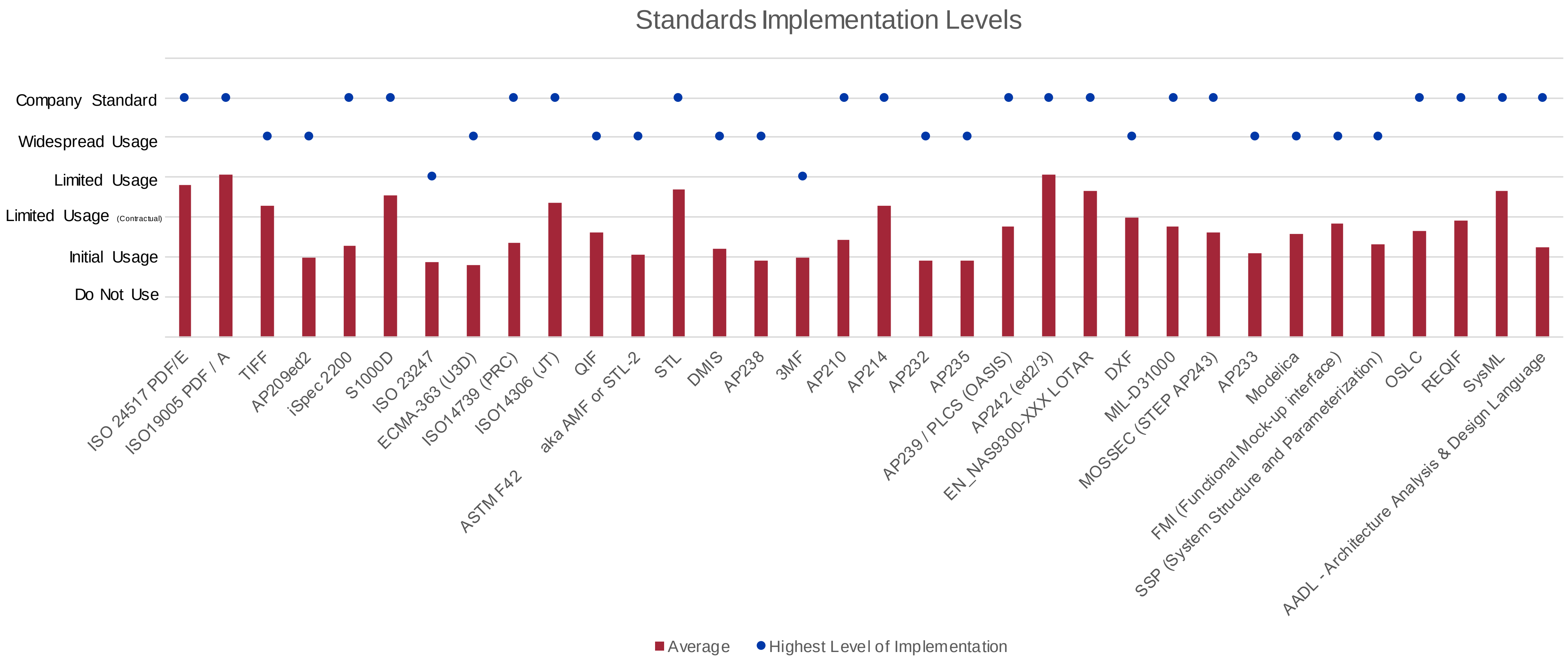
- ECMA-363 (U3D)
- ISO14739 (PRC)
- ISO14306 (JT)

- iSpec 2200
- S1000D

- AP209ed2
- ISO 23247
- DXF
- MIL-D31000
- AADL

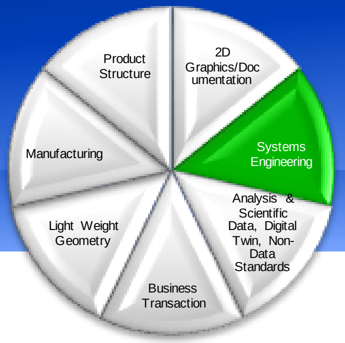
# Standard Level Utilization

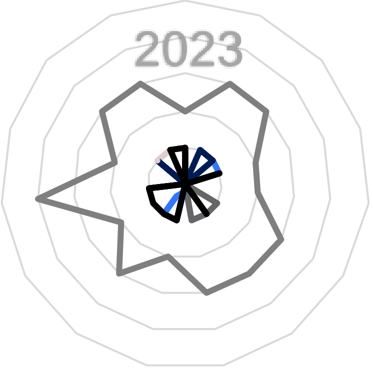




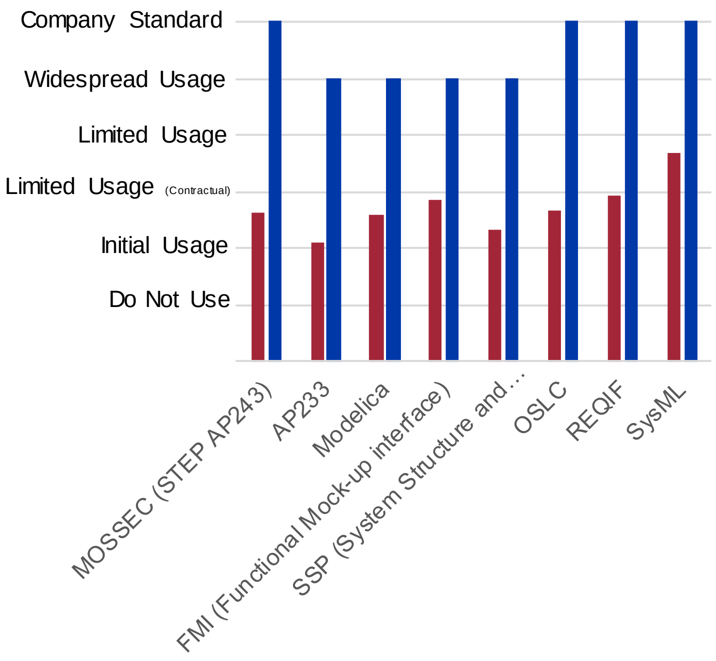
# Systems Engineering






## Standards Implementation Levels




## Utilization Levels

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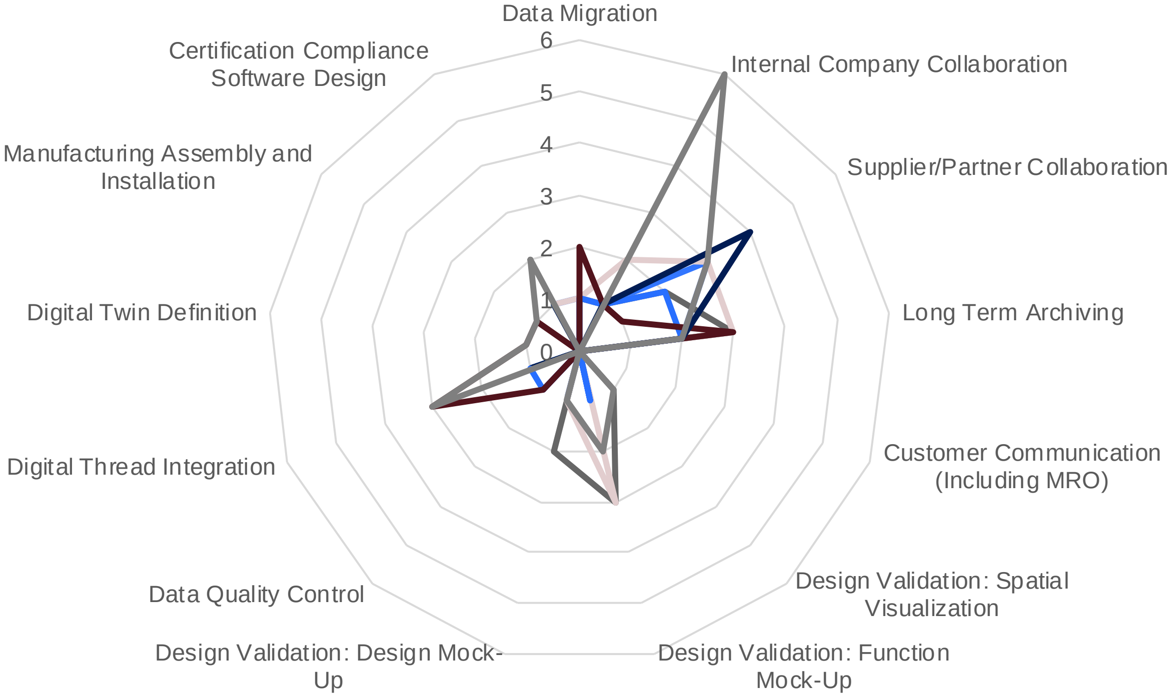


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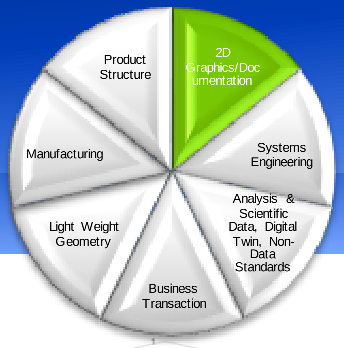
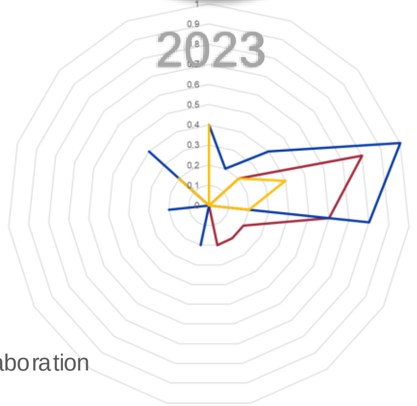
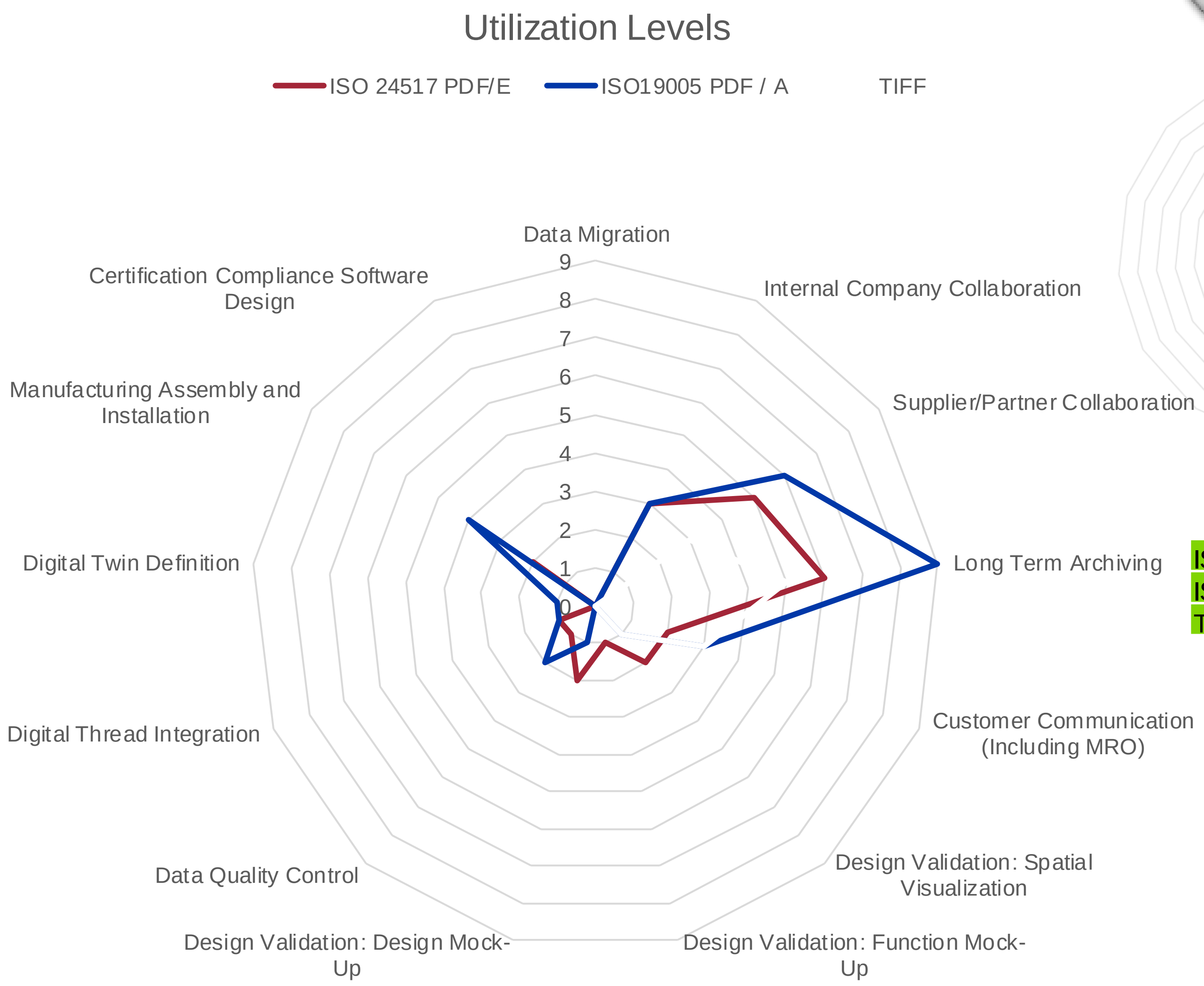
# 2D Graphics/Documentation

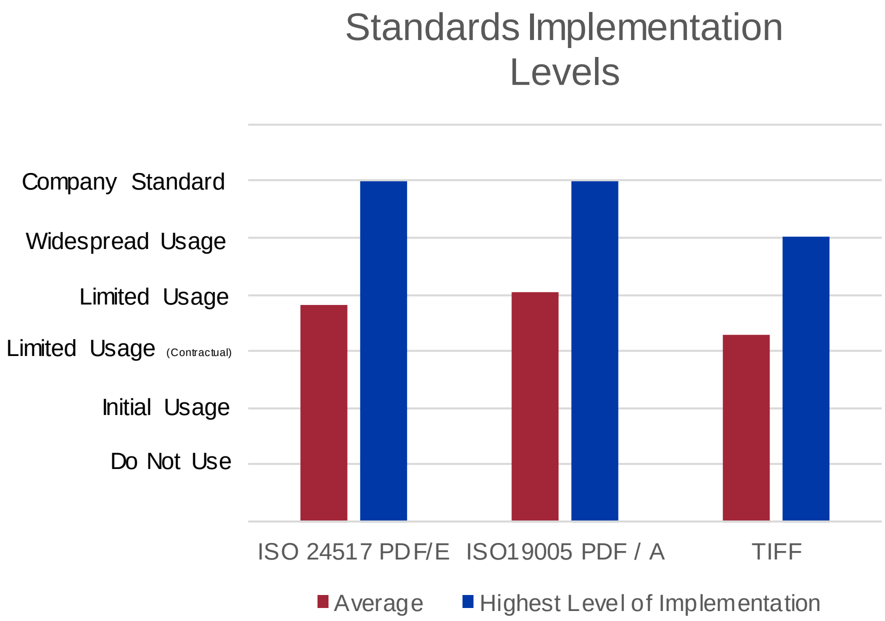





ISO 24517 PDF/E
ISO19005 PDF / A
TIFF



# Product Structure Survey Results

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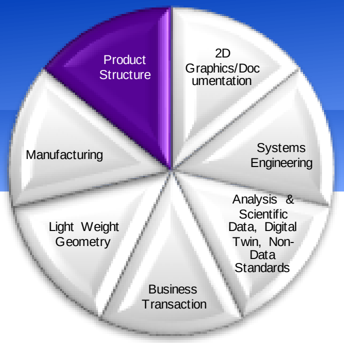


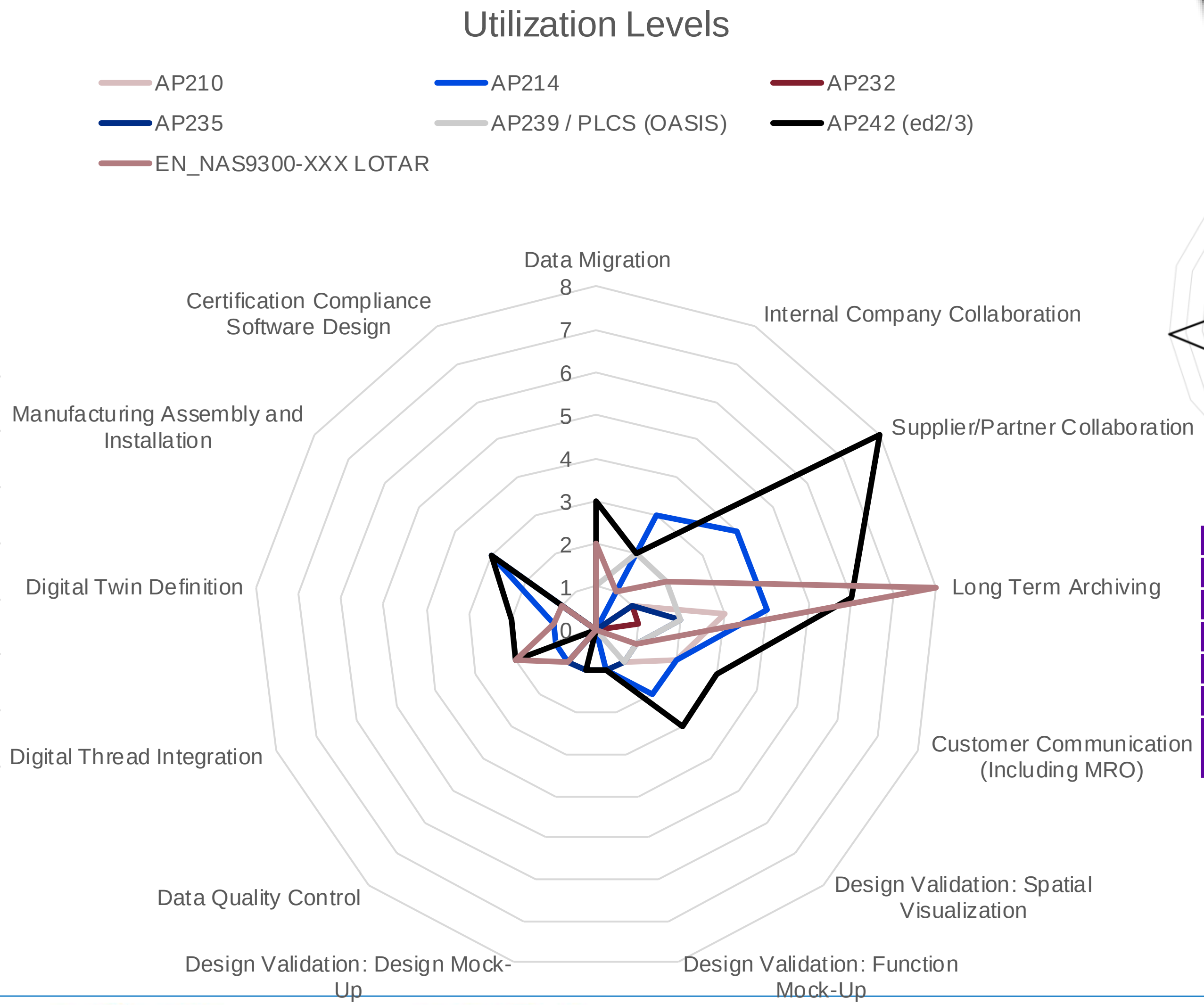


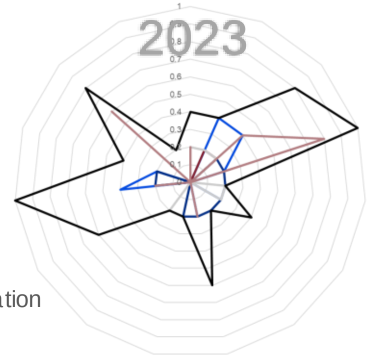


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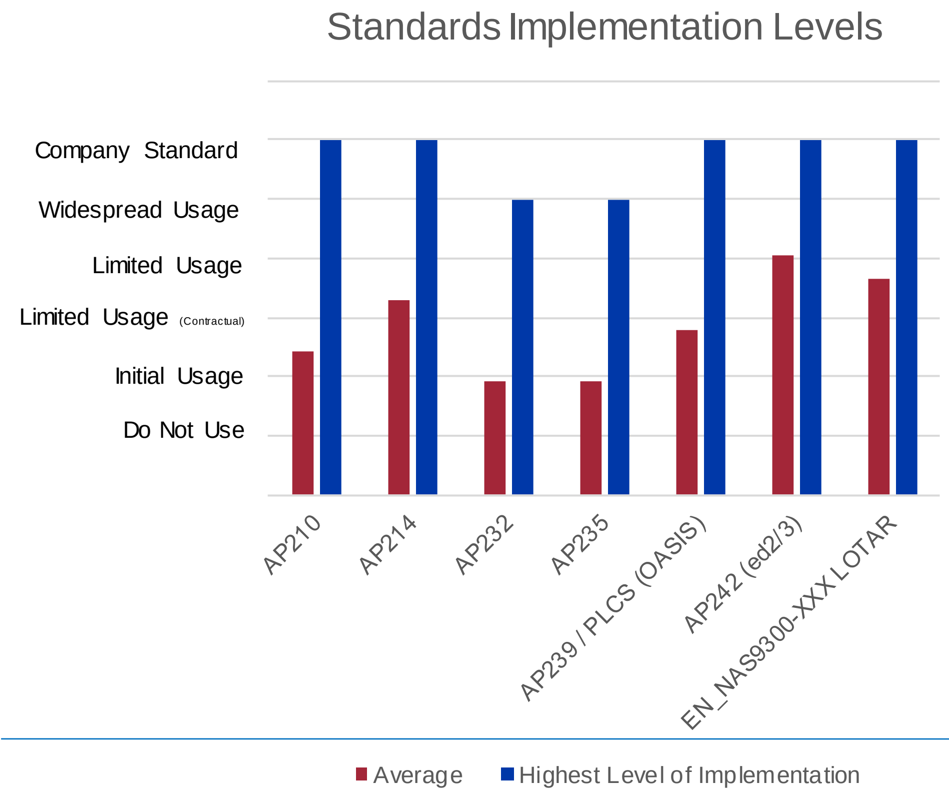
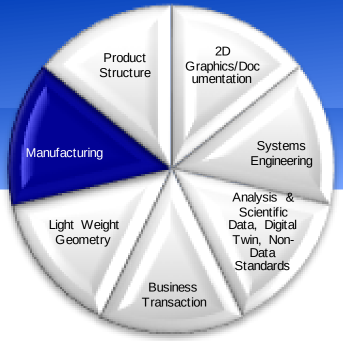
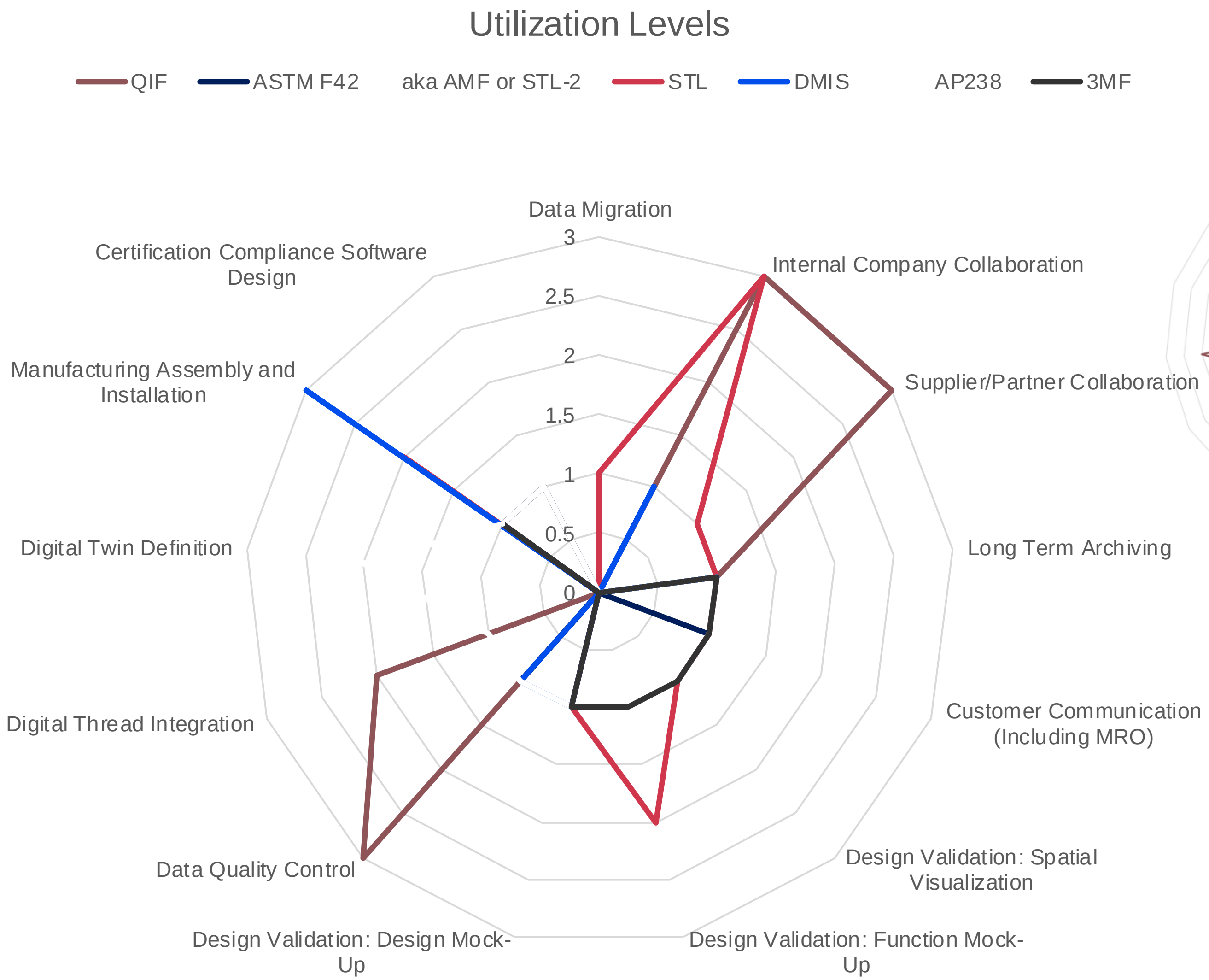
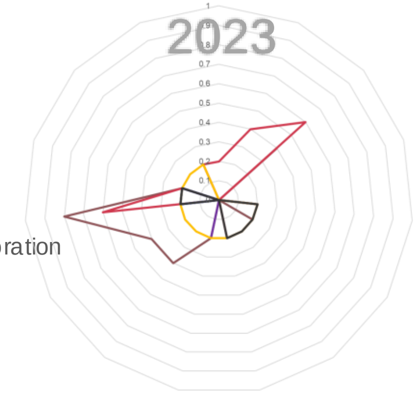


# Manufacturing Survey Results






**QIF**
**ASTM F42 aka AMF or STL-2**
**STL**
**DMIS**
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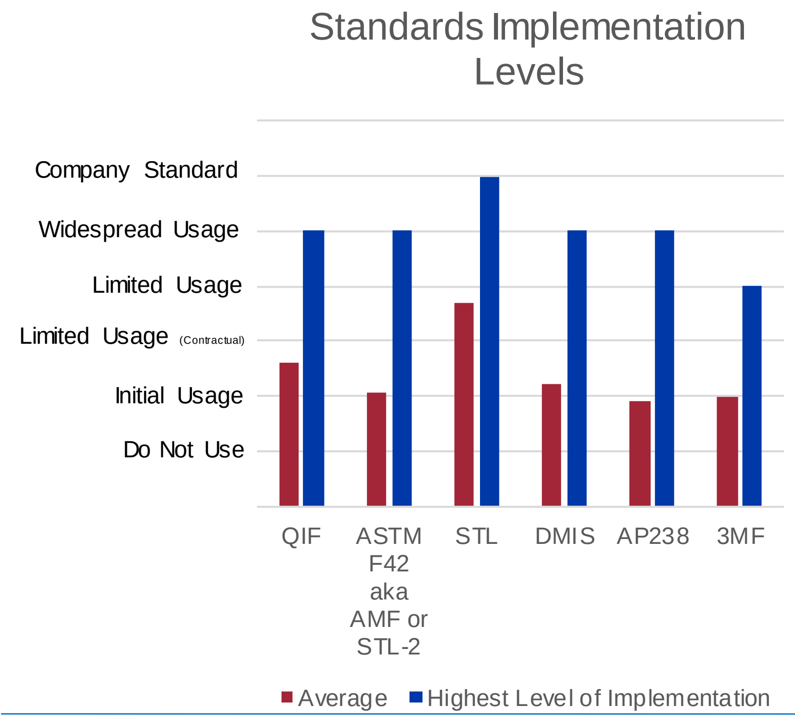
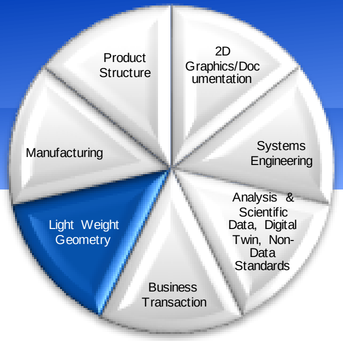
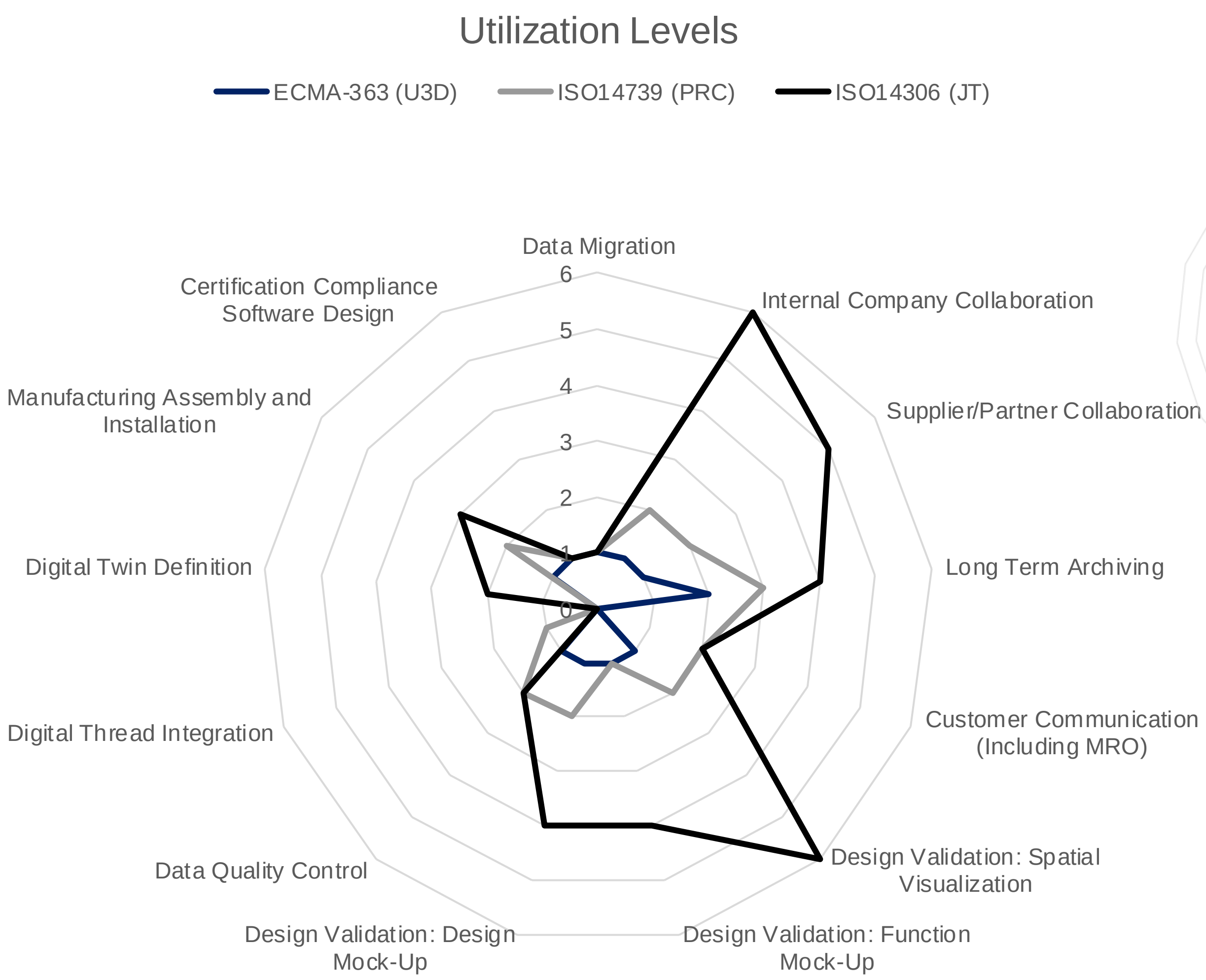
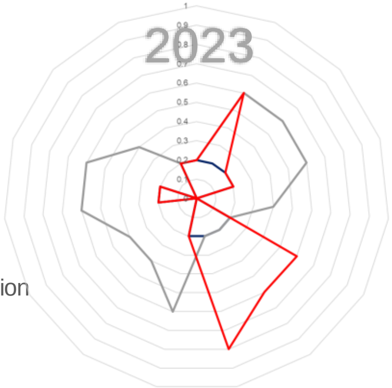


# Light Weight Geometry Survey Results






ECMA-363 (U3D)
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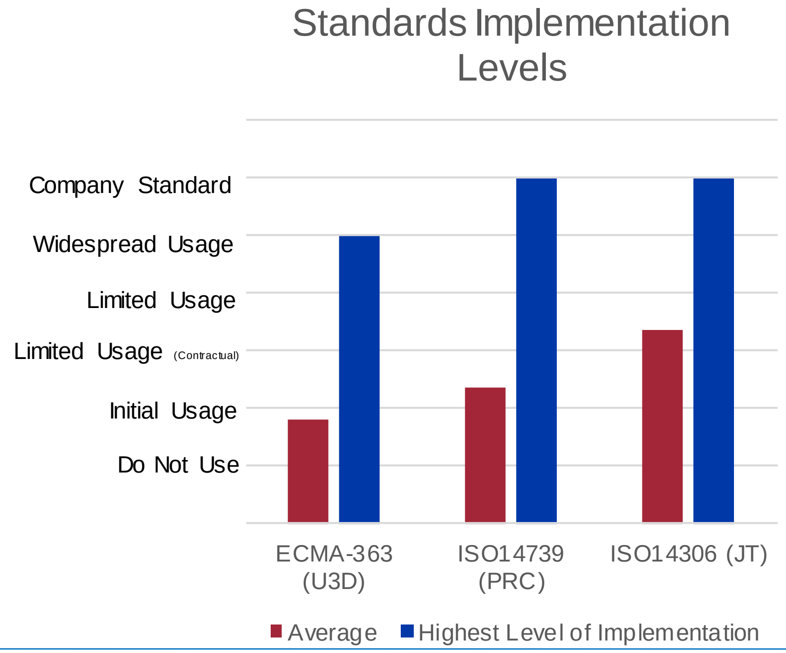

# Business Transactions Survey Results

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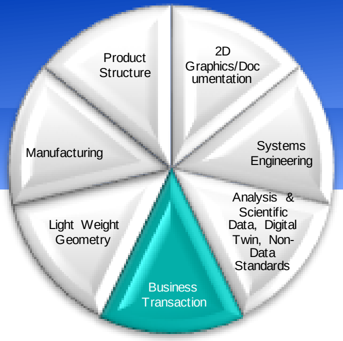
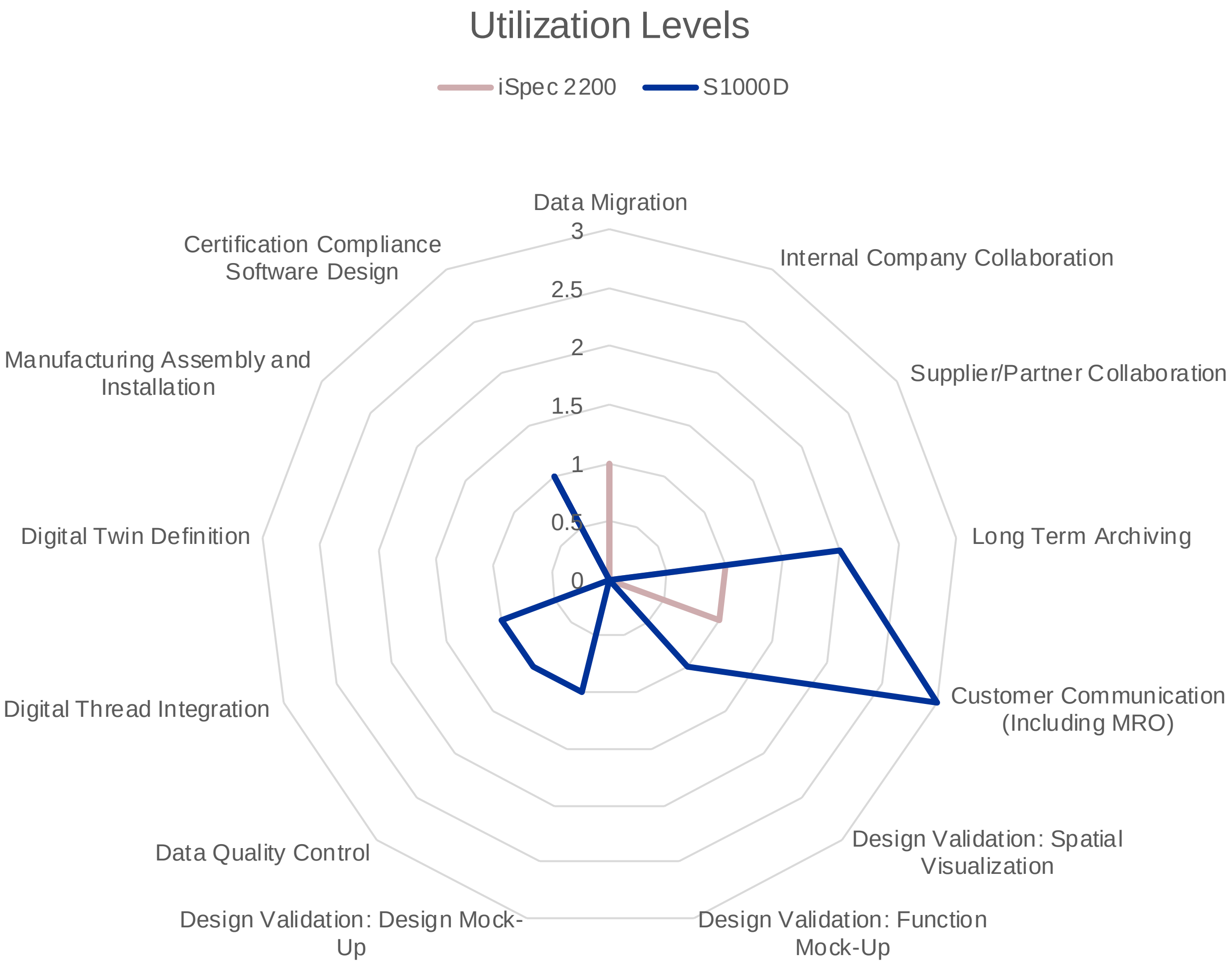
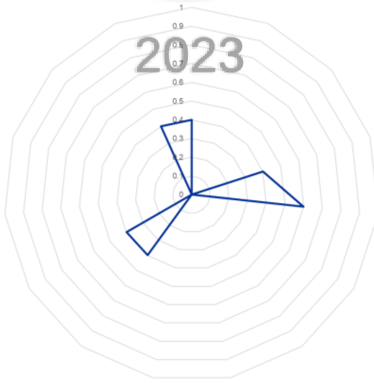
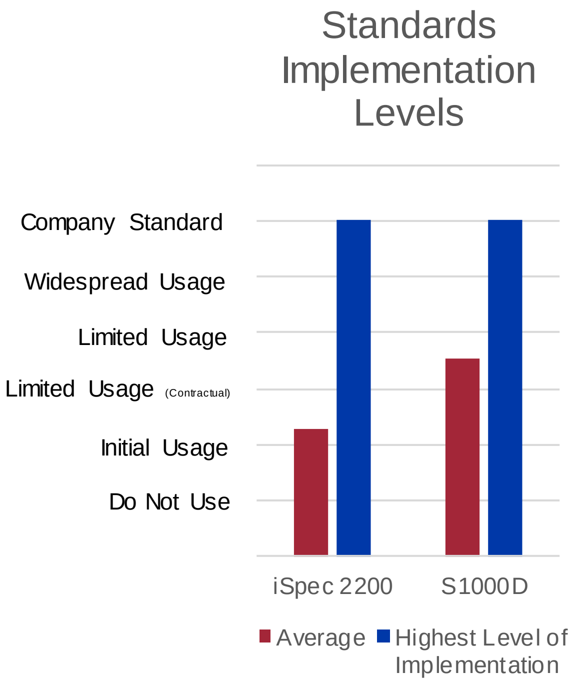


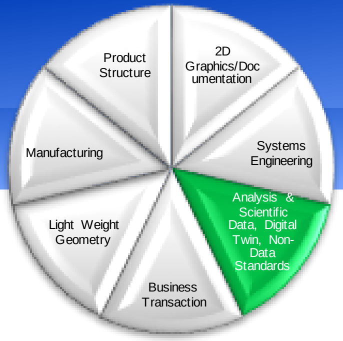



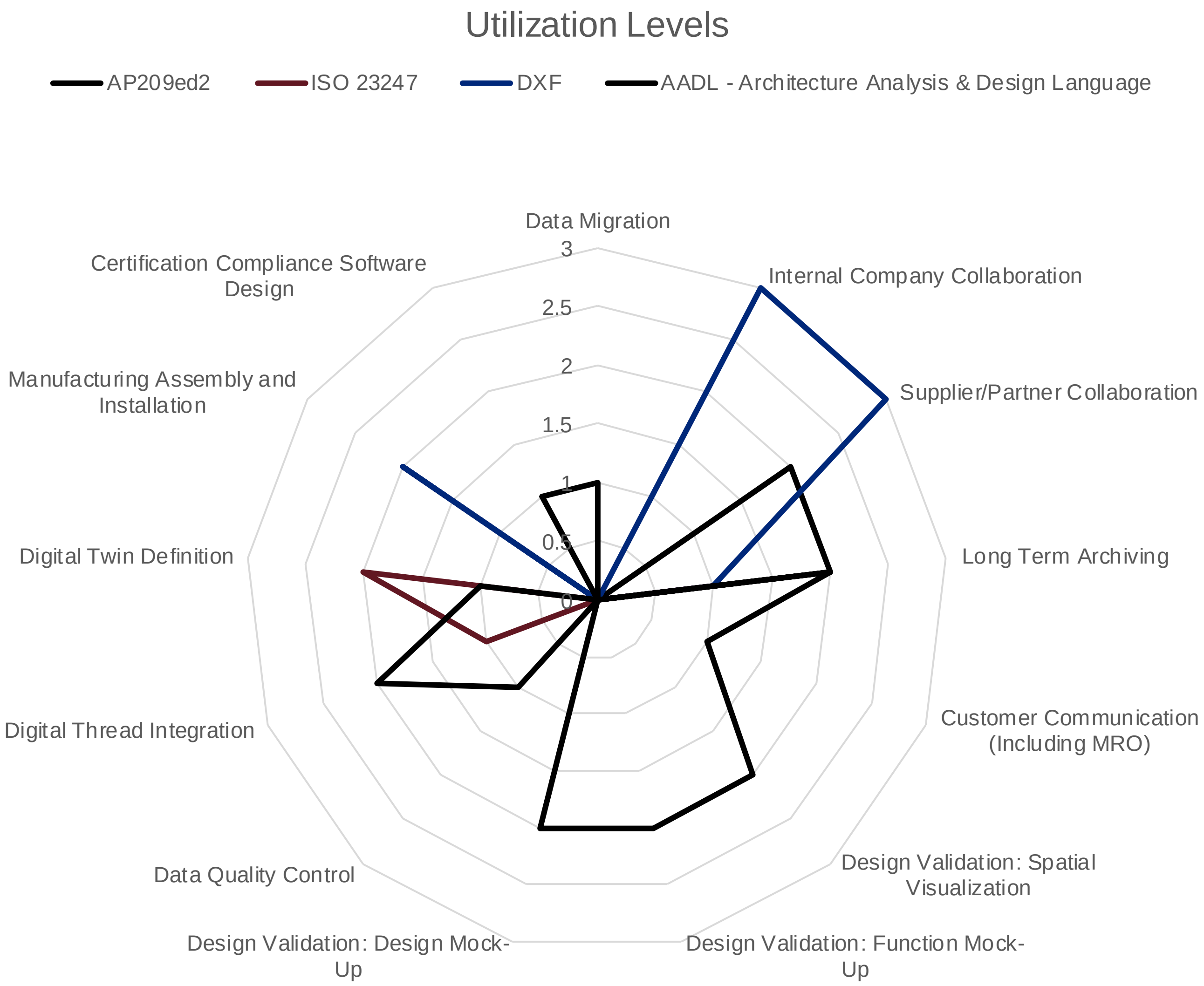



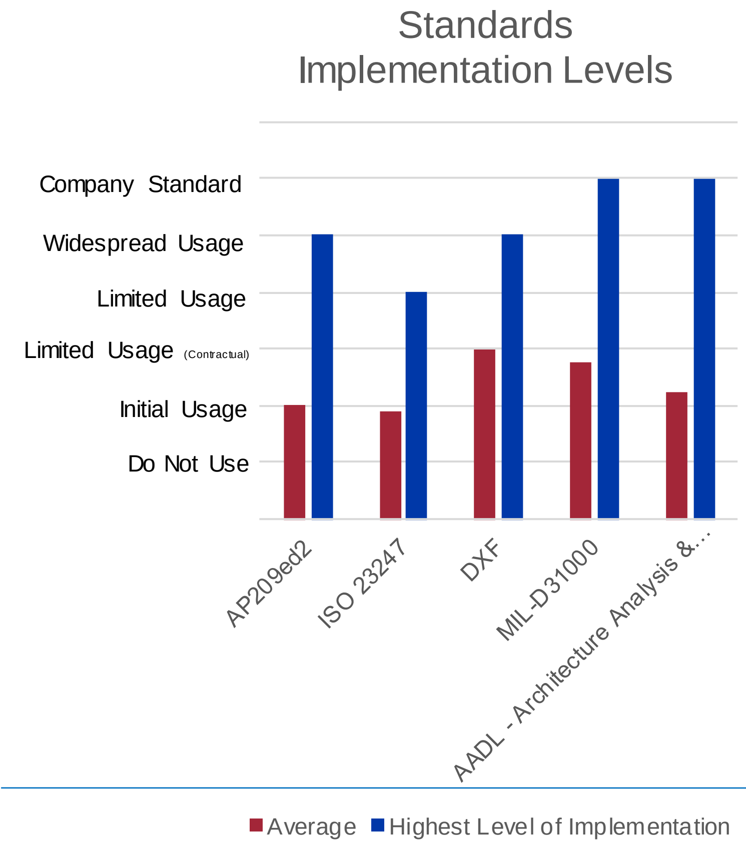

iSpec 2200
S1000D

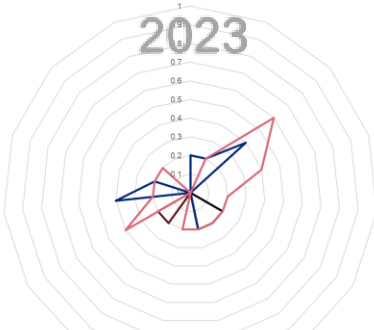
# Analysis & Scientific Data, Digital Twin, Non-Data Standards Survey Results





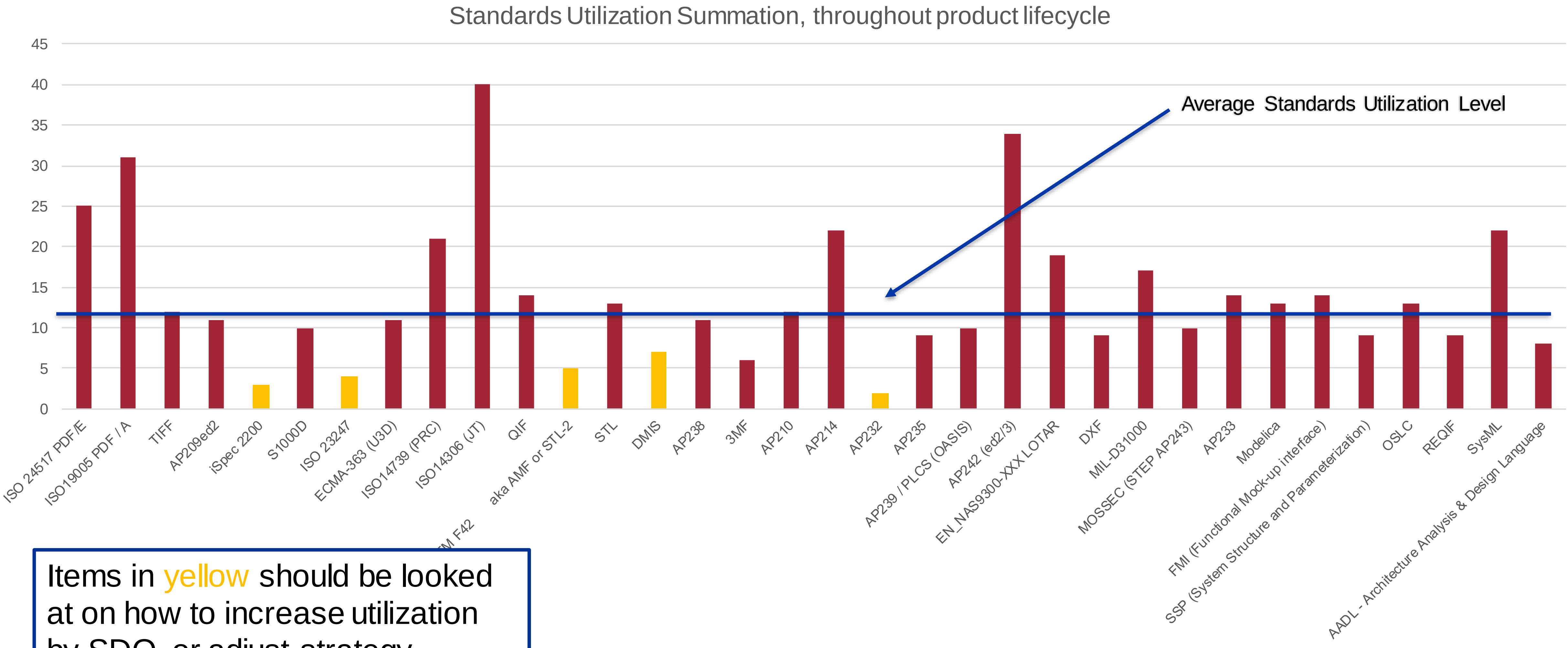




*AADL added to chart, from 2023

**AP209ed2**
**ISO 23247**
**DXF**
**MIL-D31000**
**AADL**

# Standards in the Product Lifecycle

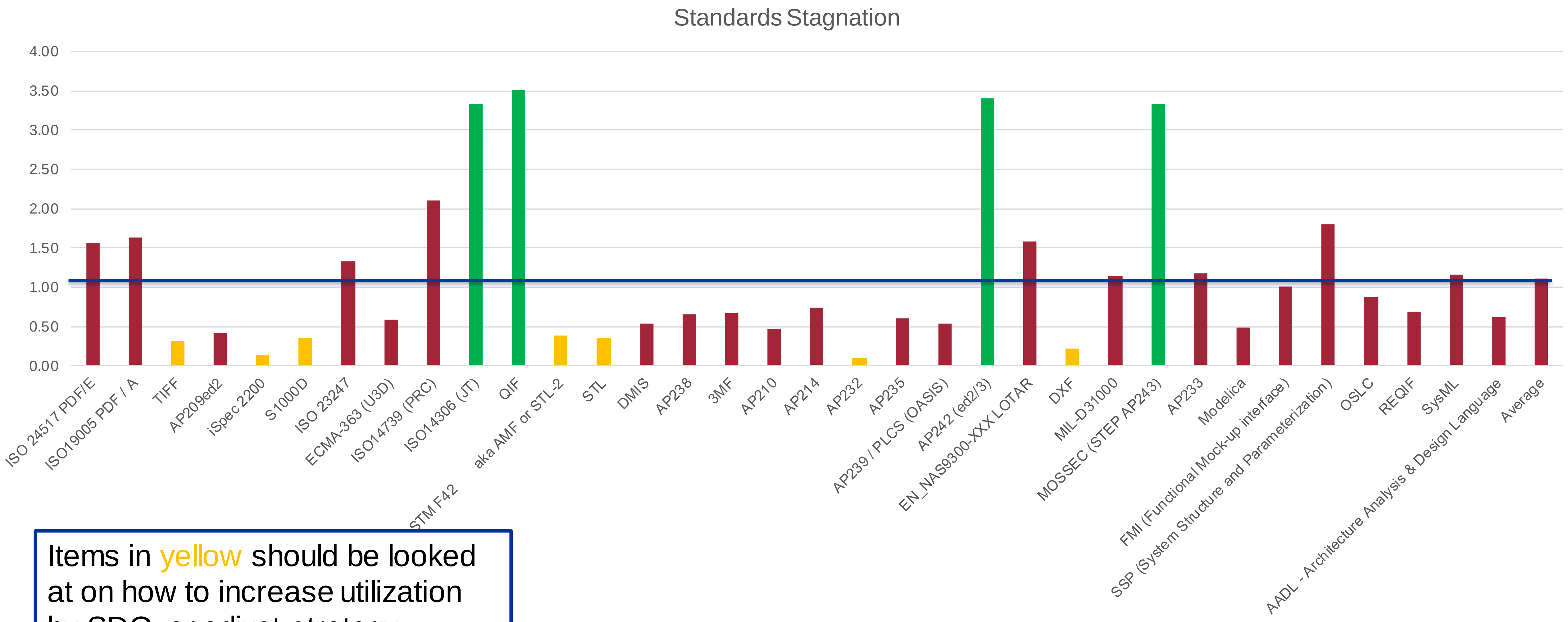





Items in yellow should be looked at on how to increase utilization by SDO, or adjust strategy

# Standards in the Product Lifecycle, when we consider the age of a standard





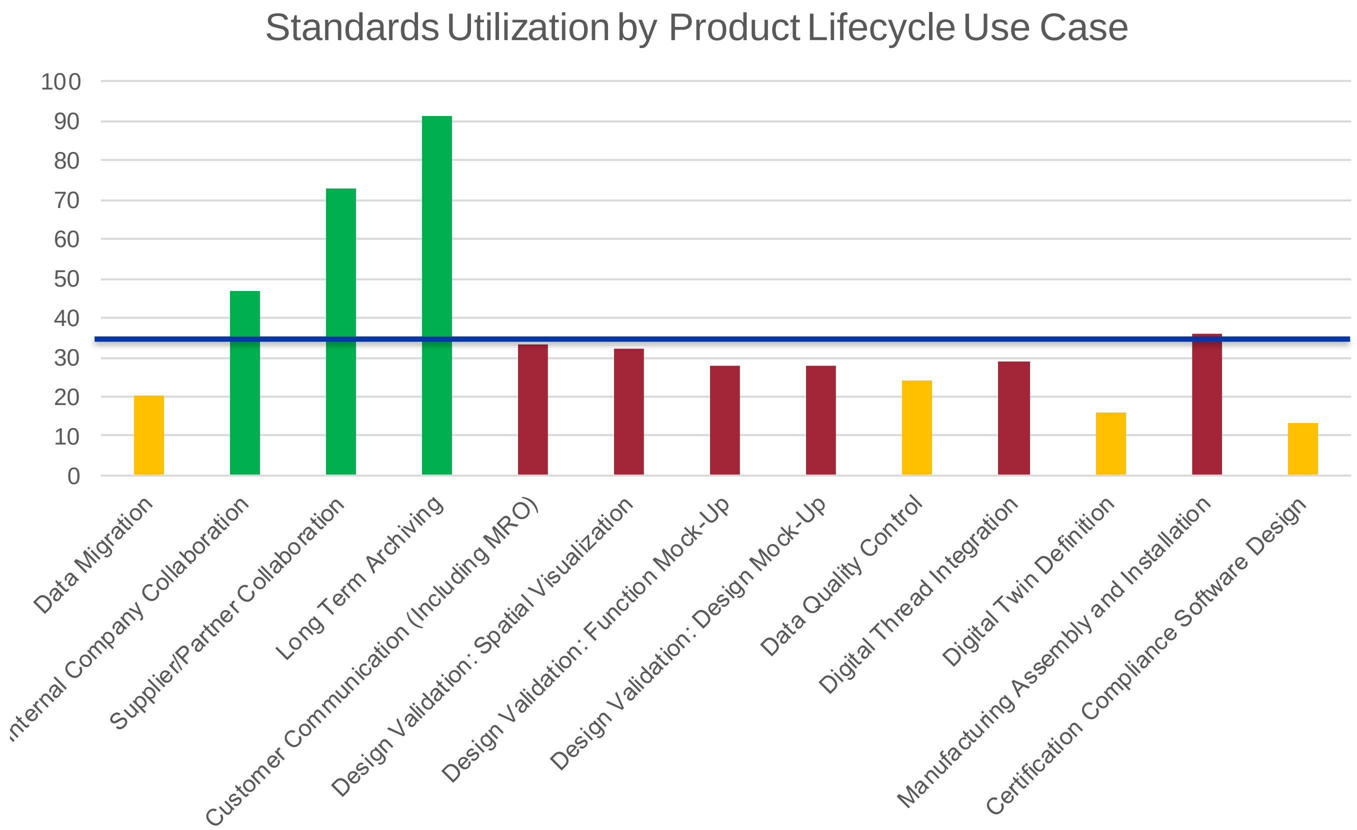

Items in yellow should be looked at on how to increase utilization by SDO, or adjust strategy

# Product Lifecycles use of data interoperability standards



- Items in yellow should be looked at by an SDO as to understand how we can best meet the needs of the industry and whether or not we have answers for these areas

- Items in green show clearly area where standards are being utilized in the product lifecycle



# Lessons Learned and Items to Consider in future



- Lessons Learned and Considerations:
  - While click through and survey engagement were good, data validation is tough to gauge.
    - Online surveys with more explanations on terms may help, Term library
    - Instructor led survey engagement may help data quality in future
  - Multiple Standards utilization surveys across the industry were completed in 2024. Consolidating efforts between organizations running efforts may help improve data quality, at the expense of multiple use cases.
  - Utilizing survey experts drastically improved engagement and increase quality of the engagement for surveyors.

# Questions?

Where would you like to see more development in data interoperability standards?
Where do you think we are missing the mark in our surveys?
How can we make this more actionable?