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PHM 2017 PANEL SESSION 10 DISCUSSION

Leveraging data analytics for digital strategies in commercial aviation

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Honeywell: The Power of Connected

ConnectedEngine ConnectedECS ConnectedMaintenance

ConnectedAPU ConnectedBreaks

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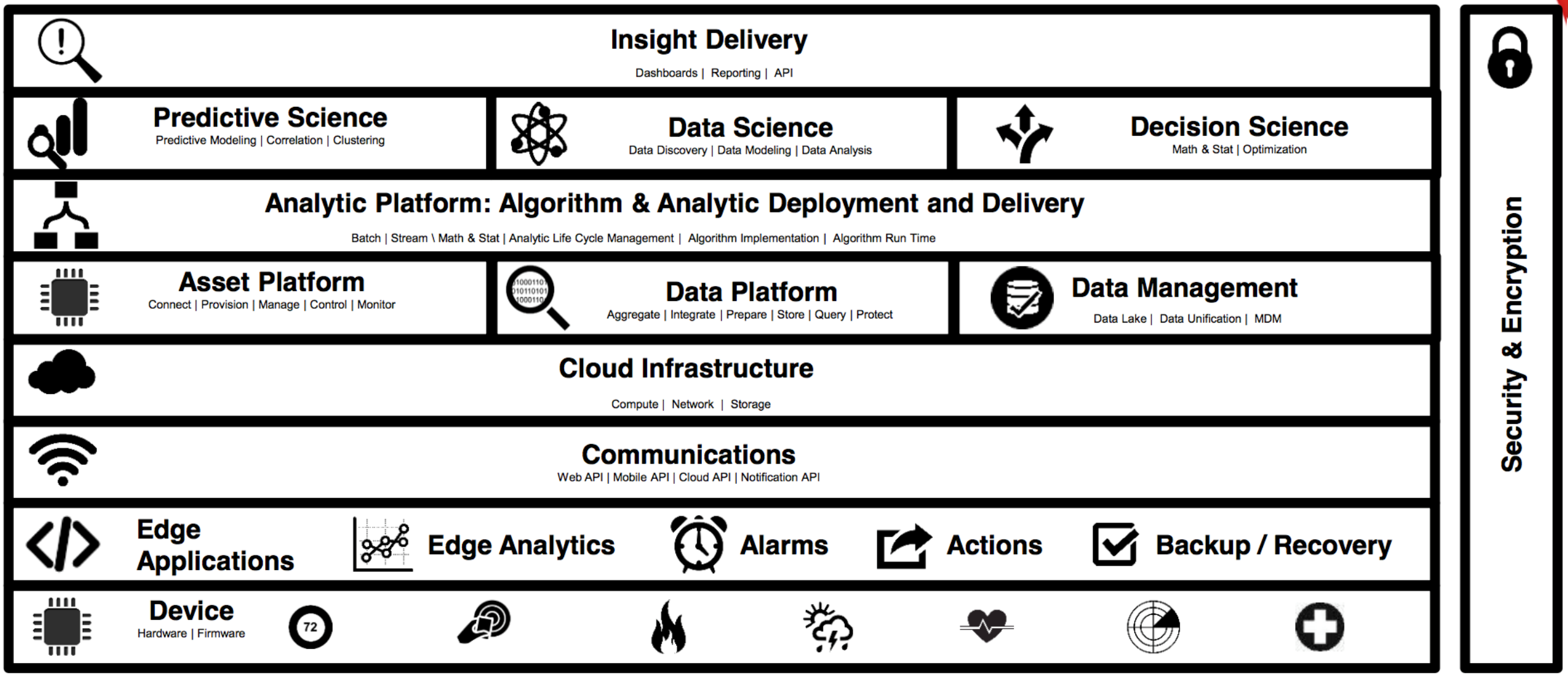
IIoT Infrastructure and Platform



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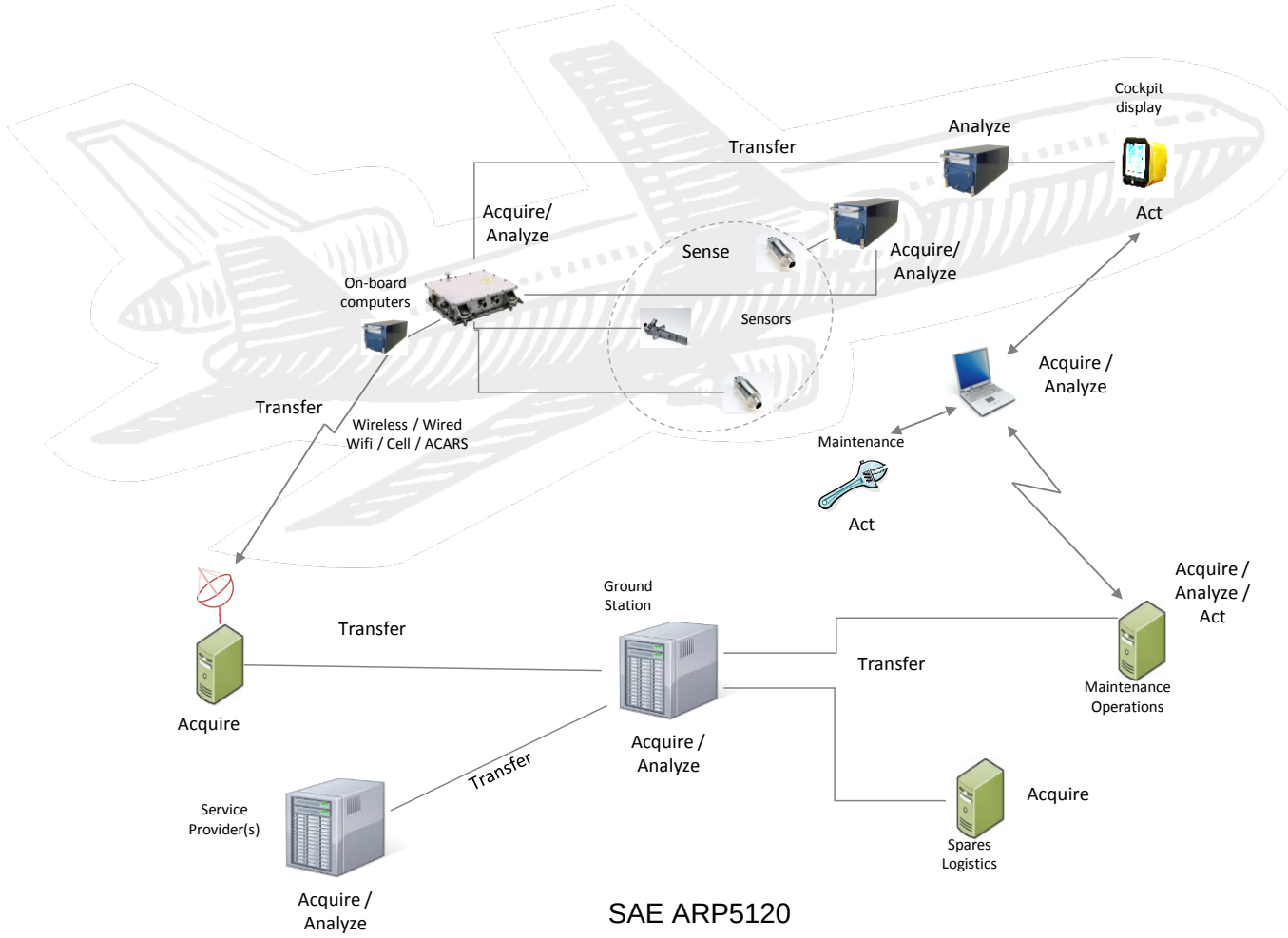
PHM as a Cyber Physical System: Challenges (1)

- Data availability
  - Legacy systems – dark or gray
  - Data ownership
- Data Connectivity
  - Large amount of data
  - Real-time data transfer
  - Operational and manufacturing data integration
- Data interoperability
  - System of systems
- Data Analytics
  - Imbalanced data
  - Integration of physics-based modeling with big data analytics



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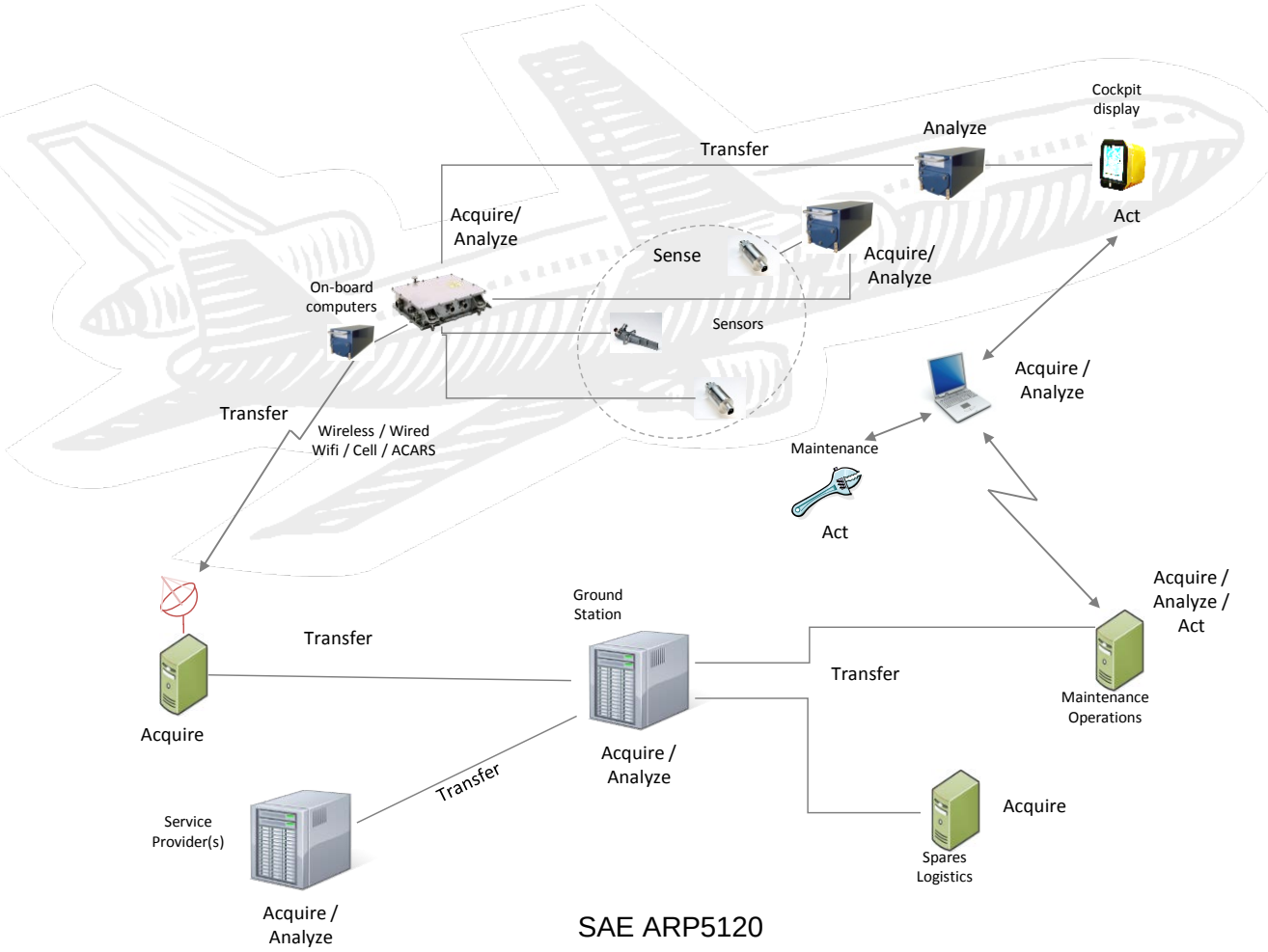
PHM as a Cyber Physical System: Challenges (2)

- Human user experience
  - Bring operational, performance, and maintenance data to people's finger tips
- Configuration management
  - IUID tracking through product lifecycle
  - 3rd party components
- Data assurance and cyber security
  - Lack of systems understanding
  - Lack of test standards
- Certification
  - Maximize benefits beyond advisory role



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Trending Approaches in Industry

- Data availability
  - Smart LRUs
  - Edge devices
  - Negotiated data paths and ownership
- Data Connectivity
  - Wireless
  - Improve data transfer technologies (e.g. SATCOM)
  - Streamlined data management
- Data interoperability
  - Industry standards
  - Digital-ready components
- Data Analytics
  - Heterogeneous data fusion
  - Automated self-learning
- Human user experience
  - Data accessibility per persona
  - Virtual interface gadgets
- Configuration management
  - RFID
  - Broad implementation of IETM V
  - System connectivity
- Data assurance and cyber security
  - Industry standards
  - Systems engineering practice
- Certification
  - Case based approaches
  - Virtual certification

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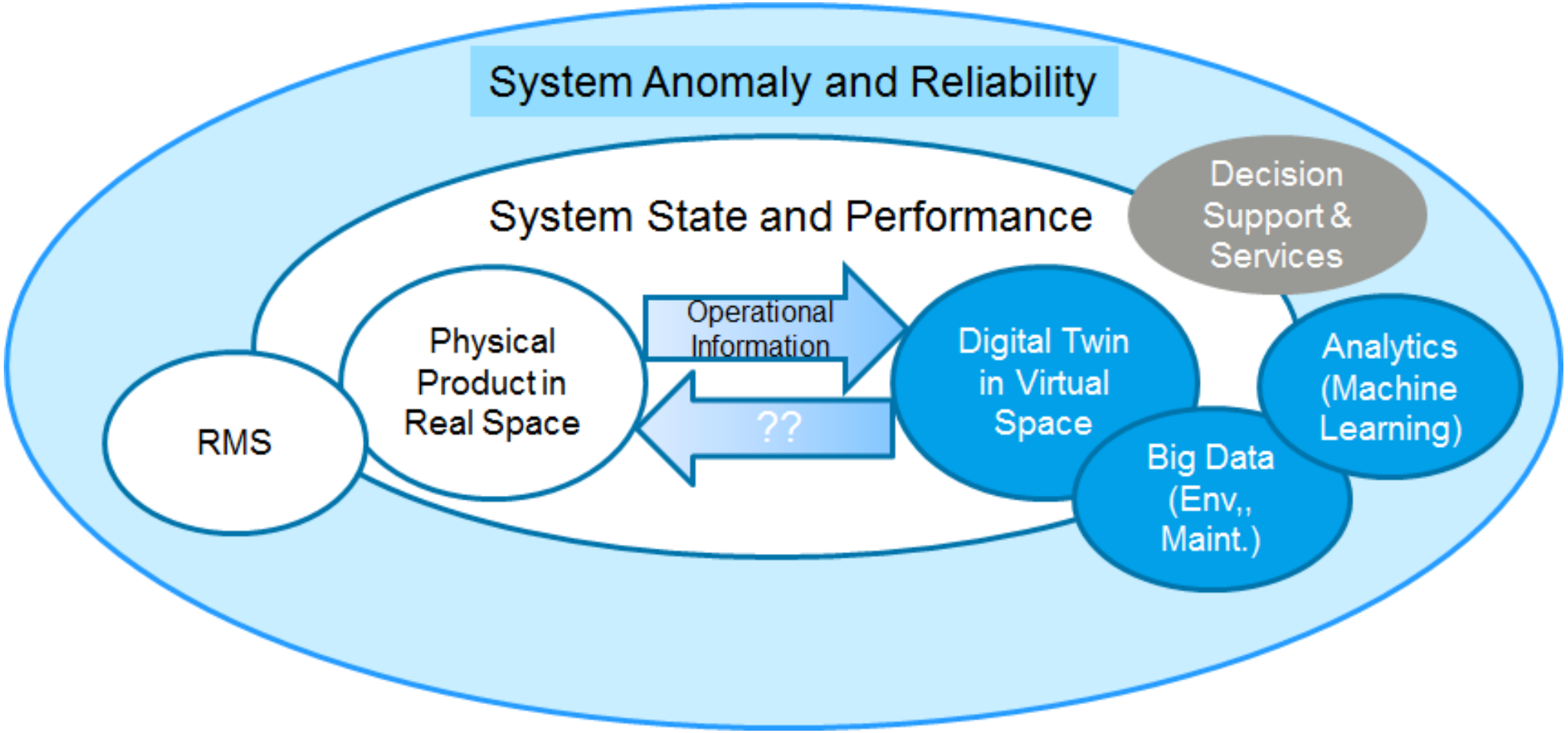
Digital Twin – Virtual System



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Bring More Virtual Capabilities to the Real Space