



BOSTON CONVENTION AND EXHIBITION CENTER
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A Digital Transformation Foundation Starts with Open Standards
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Digital Transformation

- Imperative for all businesses
- Allow businesses to remain competitive and relevant
- Integration of digital technology in all areas of business
- Fundamentally changing how businesses operate and deliver value to customers
- Cultural change – need to challenge status quo



Digital Transformation Drivers

- Market Forces – competitive pressures
- Technology Advancements – such as open systems, AI, IoT, Cloud Computing
- Business Imperatives – enhancing operational efficiency, fostering innovation, enabling agility and scalability
- Cultural Shift – embracing a digital mindset



Key Challenges

- Legacy Systems and Infrastructure – overcoming limitations of outdated technology
- Data Management and Security – ensuring privacy, integrity and accessibility of data
- Organizational Resistance – addressing resistance to change and fostering buy-in
- Talent Acquisition and Development - upskilling talent with requisite digital skills and expertise



Strategies

- Executive Leadership and Vision – setting clear objectives
- Customer-Centric Approach – prioritizing customer experience
- Agile Methodologies – enable rapid iteration, experimentation and adaptation
- Continuous Improvement – establishing ongoing monitoring, measurement and refinement of digital initiatives



Empower Digital Transformation in Manufacturing

- Use digital technologies to drive innovation, efficiency and sustainability in manufacturing processes and supply chains
- Leverage IoT, AI, robotics and data analytics to optimize production processes, improve asset utilization and reduce waste
- Adopt digital twin technologies to enable real-time monitoring, predictive maintenance and optimization
- Integrate digital solutions across the value chain



Harness the Power of Data

- Data is the lifeblood of digital transformation
- Develop a comprehensive strategy including storage, analysis and governance
- Leverage advanced analytics, predictive modeling and AI to extract actionable insights
- Leverage technology to enable seamless connectivity, flexibility and scalability across systems and applications



Current Manufacturing System Issues

- Today's control systems are closed and proprietary
- Difficult to maintain and upgrade
- Difficult to deploy latest IT and OT technologies
- Security was an afterthought and bolted on
- Locked into vendor for lifetime of the systems

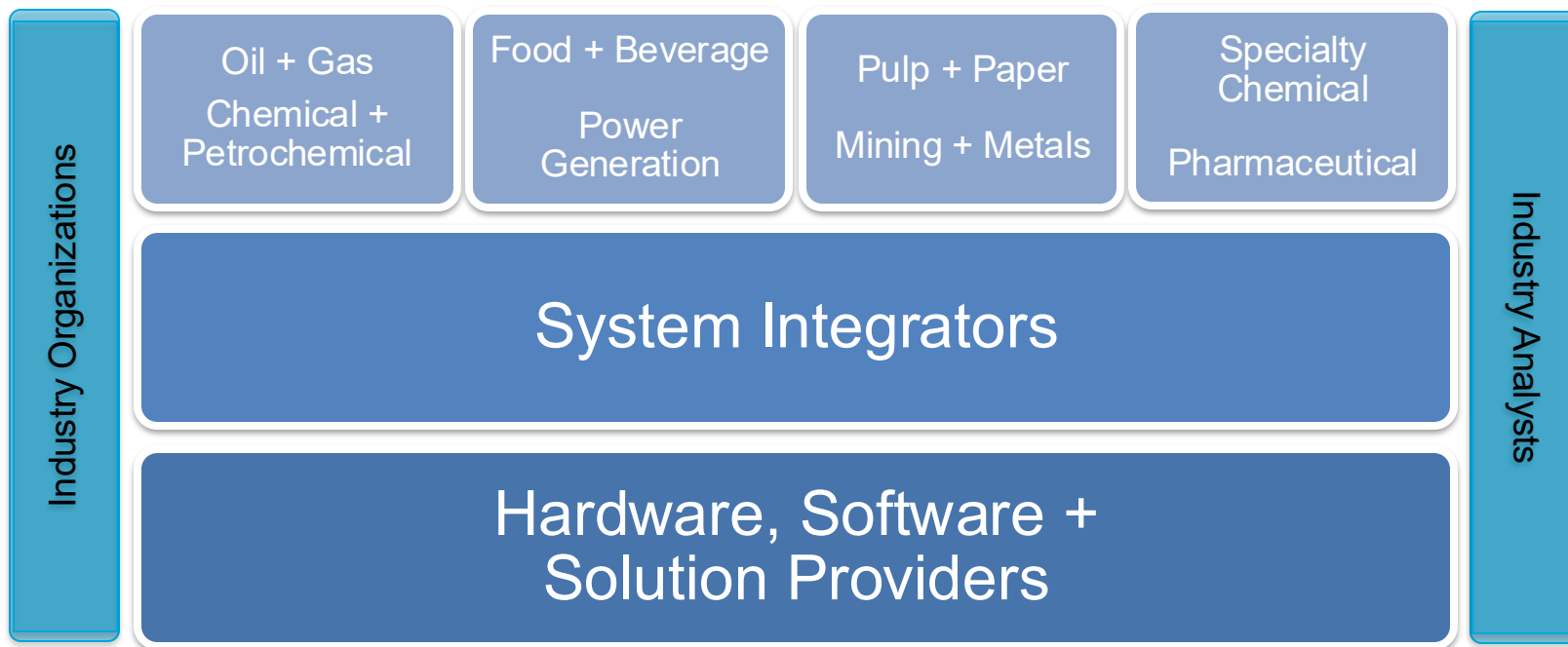


Open Process Automation Systems

- Open Process Automation Forum (OPAF™) was established in 2016 as a part of the Open Group
- Goal is to develop a standards-based, open, secure, interoperable process control architecture
- Will be a “standard of standards”
- Broad industry representation



Who is OPAF?

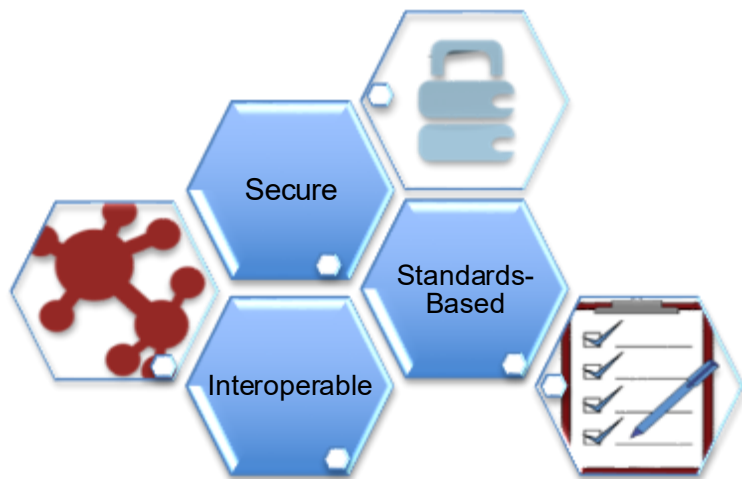


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Key Elements of Open Architecture



OPAF Goals and Values

Outcome Based Values

Drive value from operations

Ensure safety, reliability + security

Reduce life-cycle costs

Ease upgrade + replacement path

Maintain end-user software portability

Easy integration of certified, best-in-class, fit-for-purpose products

Foster & reward innovation

Protect intellectual property

GOALS: Open, interoperable, secure-by-design process automation architecture and a thriving ecosystem of certified products, community of suppliers, integrators and end users



Why is OPAF Different?

“Standard of Standards” Strategy – Already Proven in Aviation Industry

Open Process Automation Forum



Create MORE standards? – No!



Integrating existing standards



Holistic view of ensuring interoperability among process automation technologies



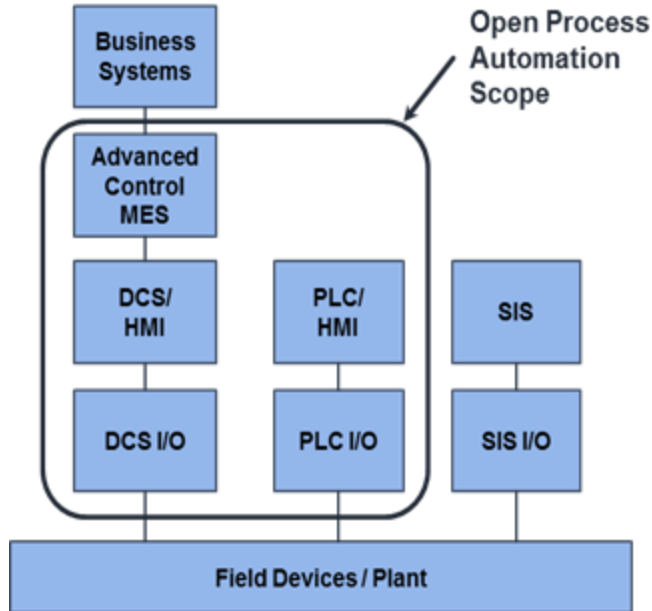
Certify systems and components that **conform** to agreed upon set of standards



To be listed in the Open Group Register, OPAF Components Must Pass Exactly 100% of All Conformance Tests. Pass or Fail.



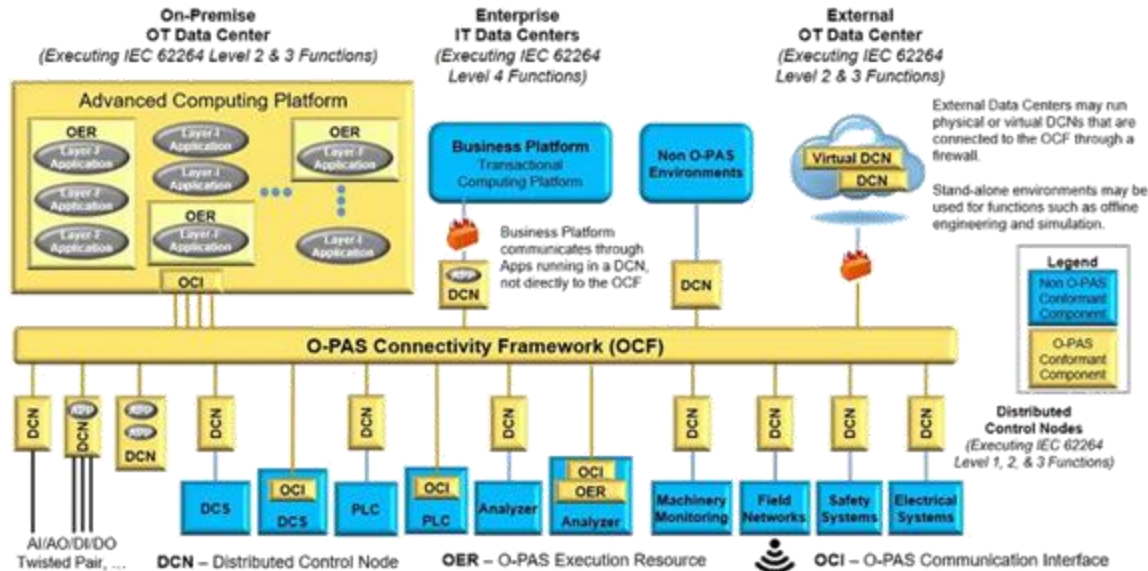
Scope of Work



Term	Description
MES	Manufacturing execution system
DCS	Distributed control system
HMI	Human-machine interface
PLC	Programmable logic controller
SIS	Safety instrumented system
I/O	Input / Output point



A standards-based, open, secure, interoperable process control architecture



- Interoperable components; Portable software
- Commercially available; Multiple industry sectors
- Protect suppliers' intellectual property
- Markets for suppliers' and system integrators' components and services expanded

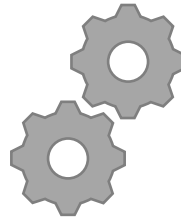
Benefits of the O-PAS™ Standard

Improved Operations



- Easy migration and upgrade path
- Certified software and hardware component interfaces

Open Systems



- Multi-vendor interoperability
- Future proof
- Ability to insert new IT/OT technologies

Pervasive Security



- Holistic security framework
- Designed and integrated from the beginning



Benefits to the End User



Reduces total cost of systems and asset ownership

Empowers workforce to be more actively involved and responsible for good business outcomes

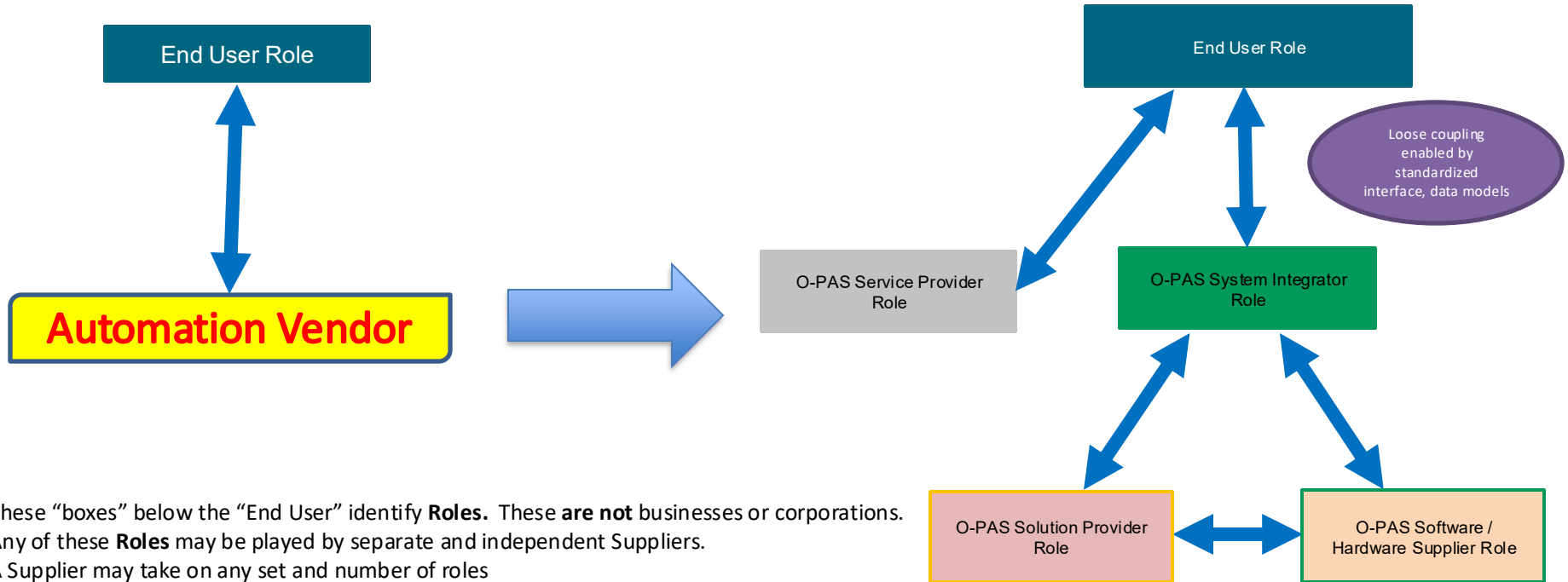
Solves system integration issues –enables digital transformation

Enables continuous innovation

Enables faster, more cost-effective upgrades

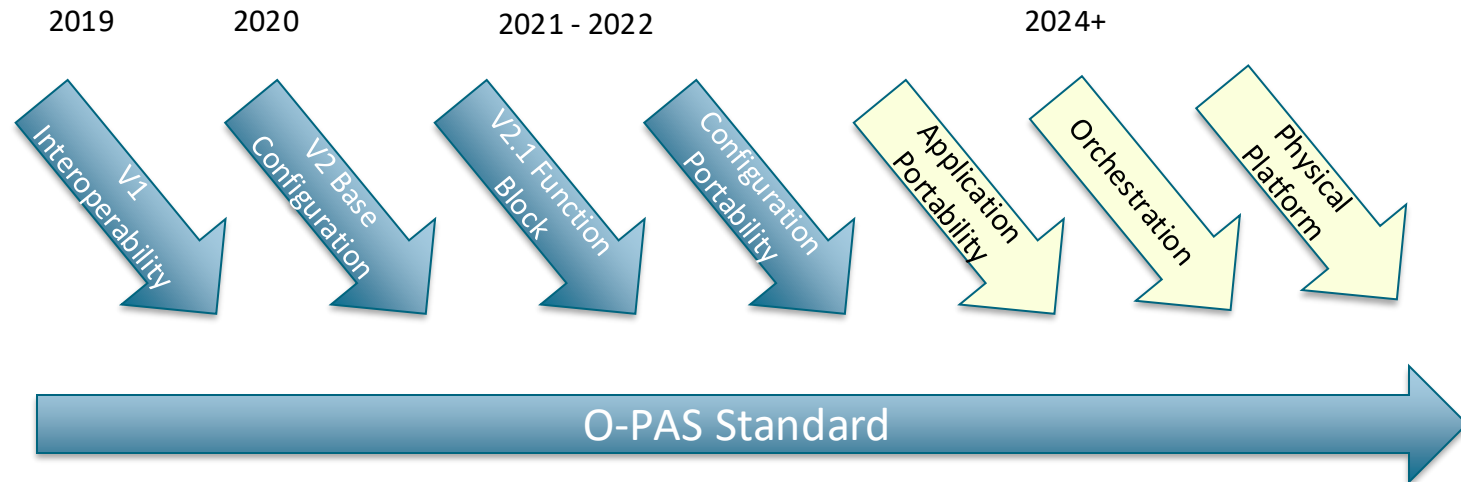


The Ecosystem is Changing

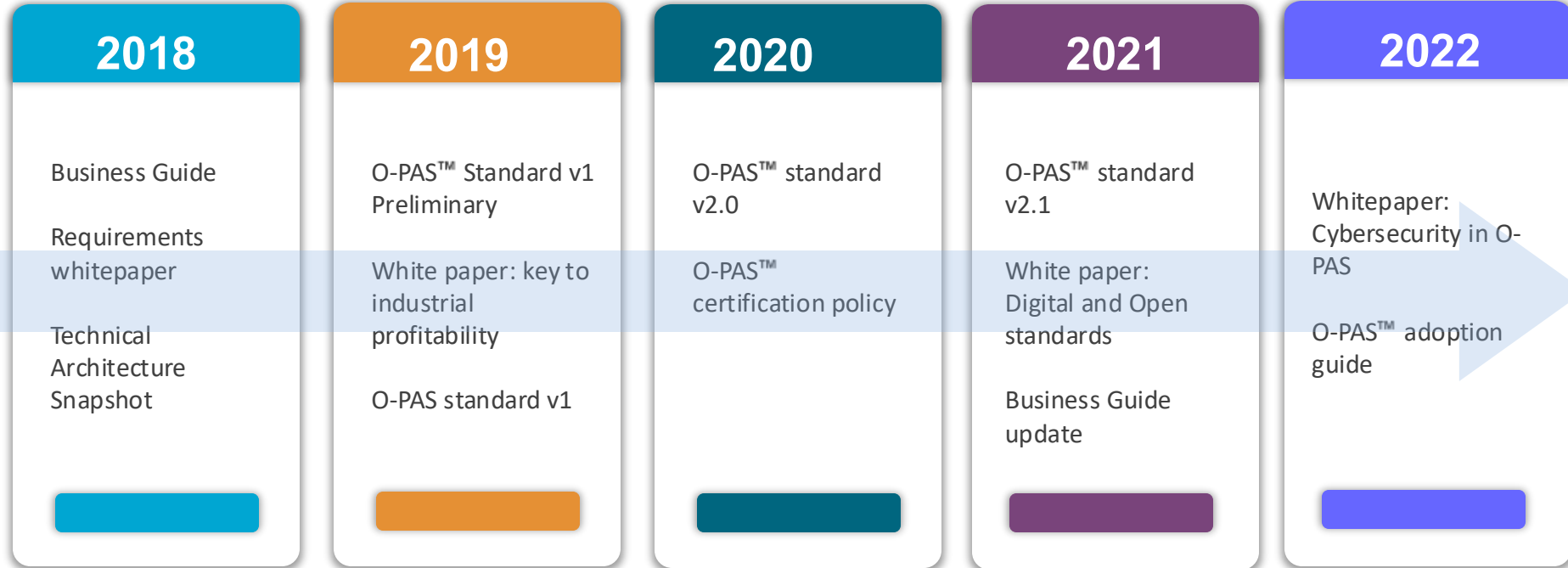


OPAF Progress

- Standards driven by business need
- As new features reached the required maturity, they'll be incorporated to a future version of O-PAS™ Standard



OPAF Major Publications



Conclusion

- Open Process Automation systems enable digital transformation by providing ready access to data through standard interfaces
- They allow for easy insertion of new IT/OT technologies as they become available
- They allow software portability across hardware platforms
- They allow the use of “best-in-class” hardware and software
- They are inherently cybersecure



OPAF Membership

More information on becoming an
Open Process Automation™ Forum Member
is available by sending an email to:

- opaf_interest@opengroup.org





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