



Process Automation Users' Association

# Collaboration as Solution

PPA Event

24 mei 2022

Jac Opmeer

# Introduction

- Jac Opmeer
  - Principal Automation Engineer @ Shell Global Solutions;
  - Co Chair of the Open Process Automation Forum
  - Executive Board Member of WIB



UNIVERSAL  
AUTOMATION.ORG



# Problem Statement

In a faster moving world the demands to our business are increasing.

Help is on it's way in the form of **Technological Solutions** or **Standardization**, however these solutions and standards are becoming more complex as well.

As a single company you have less and less grip on what is available and how to implement these solutions.

*Do we recognize this ?*

*What is the Answer ?*

An answer that works...

# Open Process Automation™ Forum



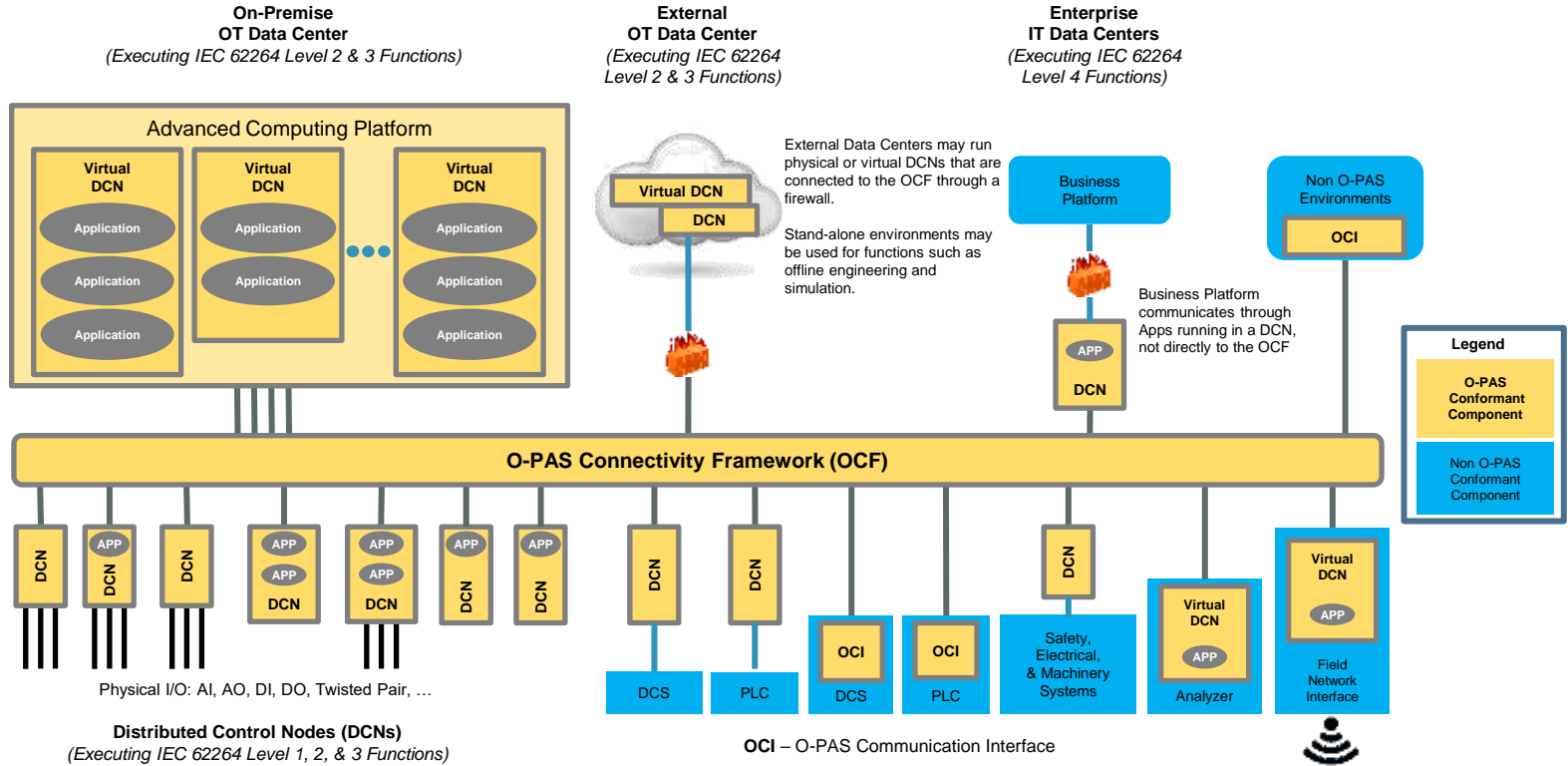
- ❑ Joint Industry Program to support the development and use of industry standards
- ❑ Broad industry representation
  - 100+ member organizations comprising users, supplier
- ❑ Demonstrated success in other industries
  - Avionics use of open systems FACE™ consortium
  - Real-time virtualization and software defined networking in telecommunications
- ❑ Standard of standards



## Open Process Automation™ Formal Partners – Partial List

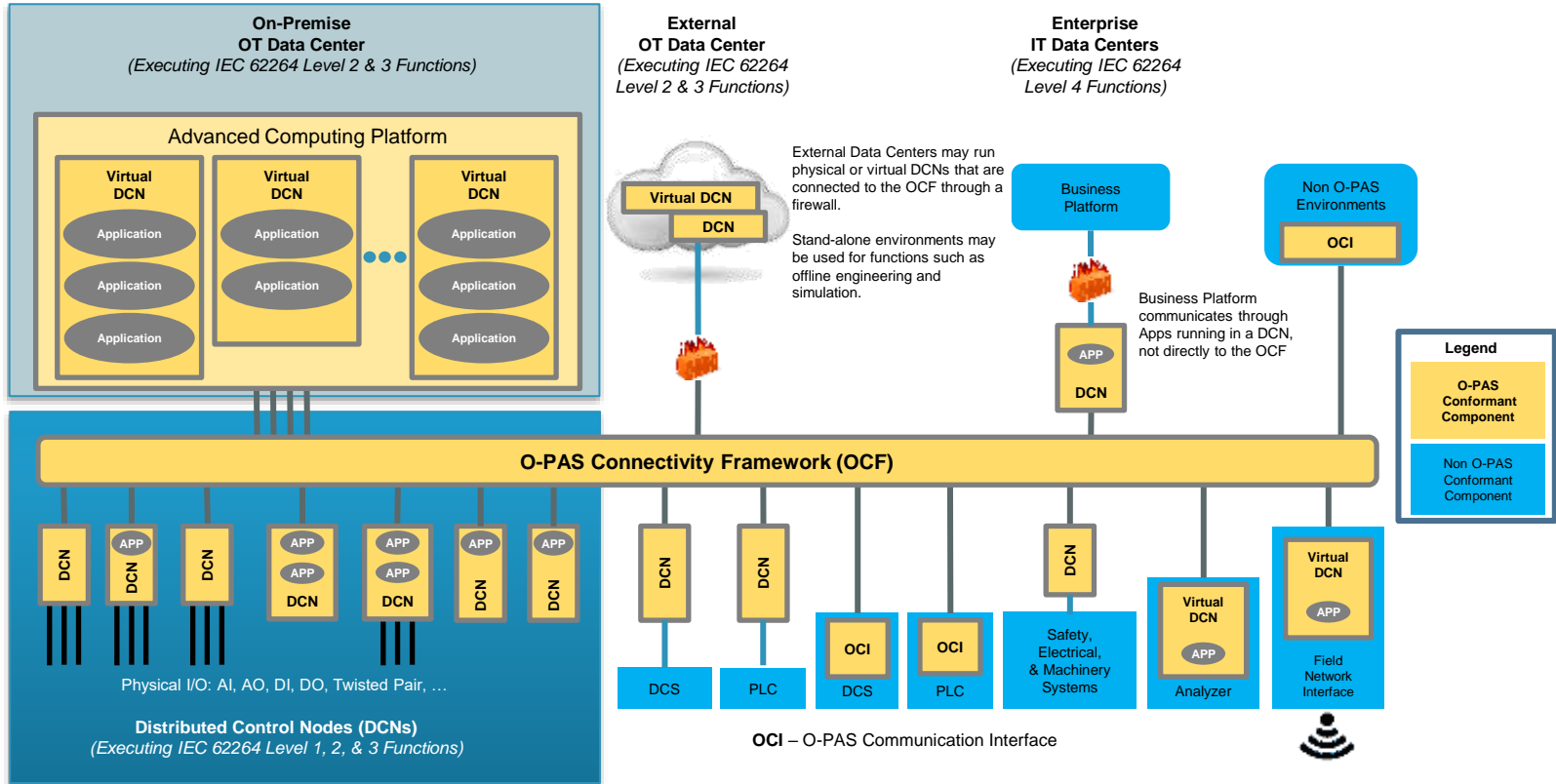


# OPAF Vision: Open, standards-based, interoperable, secure, process control architecture



# O-PAS Technical Architecture

O-PAS  
V2.x  
Focus



Another example ....



# WIB – ECO System

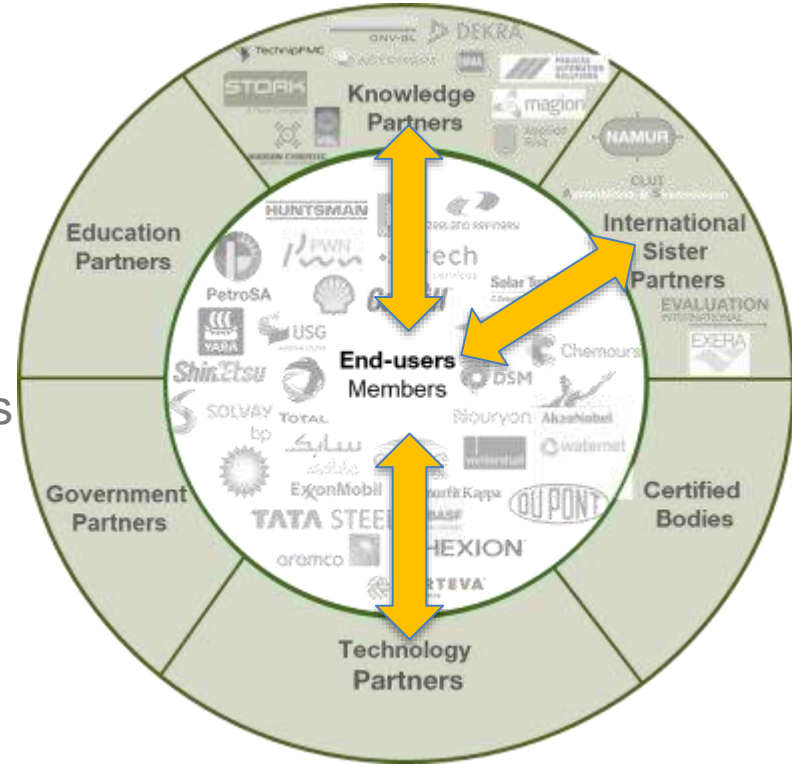
WIB focuses on increased collaboration with

- sister organisations collaborating on solutions for complex problems
- external partners like FHI to seek for opportunities to overcome complex problems

- WIB connects to ECO system based on

Themes like:

- Autonomous Operations;
- Workforce of the future;
- IT-OT Conversion.



# WIB – NAMUR Collaboration

**WIB Autonomous Operation Workgroup**  
Level definitions document

Version 1.0 | Date: 04/09/2020 | State: 0/2

**Autonomous Operations Maturity Levels**

Level 0: Full Autonomy  
Level 1: Select Autonomy  
Level 2: Advanced Regulatory  
Level 3: Regulatory Automation  
Level 4: Operations Assistance  
Level 5: Not Autonomy

**Operational Technology (OT) Digital Transformation to Autonomous Operations**

**Asset Management**  
Level management, diagnosis, maintenance, monitoring, optimization, and diagnosis needs to optimize the uptime of the plant, using real-time and performance information.

**Production Management**  
Production Management ensures operations is efficient by using minimal resources and effectively managing various requirements, including autonomous control of OT.

	Use high quality construction material to increase reliability	1	AMC01
	Use an early warning system on critical equipment by installing additional sensors and allow data analysis	2	AMC01
	Install a leak detection system based on future maintenance based on data analysis	3	AMC03
	Install "number 2" sensors (hearing, smell, touch (vibration, temperature), sight, taste, pattern recognition) as a "2nd Surveillance Layer"	4	AMC04
	Install a "2nd Surveillance Layer" with (R) cameras, microphones, gas detectors, etc.	5	AMC04
	Install automatic countermeasures for emission (e.g. aggressive and/or other systems) and/or exhaust systems	6	PM004
	Optimize processes for better commissioning after maintenance, e.g. PMSB (pre-starts safety review)	7	AMC05
	Integrate leak testing	8	AMC04
	Use smart sensors with autonomous fault detection to compensate typical failures. Different sensor or measurement principles have different level of reliability. Use redundant and diverse sensors and/or self diagnosis	9	AMC06
	Use high quality construction material to increase reliability	10	AMC01
	Use an early warning system on critical equipment by installing additional sensors	11	AMC06
	Install a leak detection system based on data analysis (e.g. smell, touch (vibration, rotation) as second surveillance layer	12	AMC04
	Sensors (e.g. with data plot or back)	13	PM005
	Roll into a safe state (e.g. stop systems)	14	PMAC5
	Stop systems	15	PMAC5
	Systems which automatically empty vessels if required	16	PMAC5
	Right backup for detected failure	17	AM28 1/200
	Equipment redundancy as standard defined operating window (size as of failure of the sensor system)	18	AMC01

**NAMUR** Remote or autonomous operation projects **NA 182**

**Preliminary note**  
NAMUR recommendations (NE) and worksheets (NA) are working documents and practical reports prepared by NAMUR members.  
NAMUR does not warrant for the completeness and accuracy of NEs and NAs. Any use of these documents by NAMUR members or third parties shall be at the responsibility and the risk of the user. All claims for damages are excluded, except as stipulated by mandatory liability laws. Details shall be governed by the NAMUR Articles and NAMUR Regulations or by an agreement to be concluded by NAMUR and a third party.  
NEs and NAs are not subject to the same level of consensus as technical standards (e.g. DIN standards) or guidelines (e.g. VDI standards). They are merely NAMUR recommendations.  
Non-German editions are translations. In case of doubt the German text shall prevail.

## Joint WIB/NAMUR Workgroup

- V1 Remote and Autonomous Operation, November 4th, 2021



# Conclusion

- Solving large problems is increasingly complex
- Technology helps solving problems
- Agreeing as a community on the common problem statement and how to use technology to solve this, is key
- Collaboration that is driving standardization, is the answer....

ШИБ

