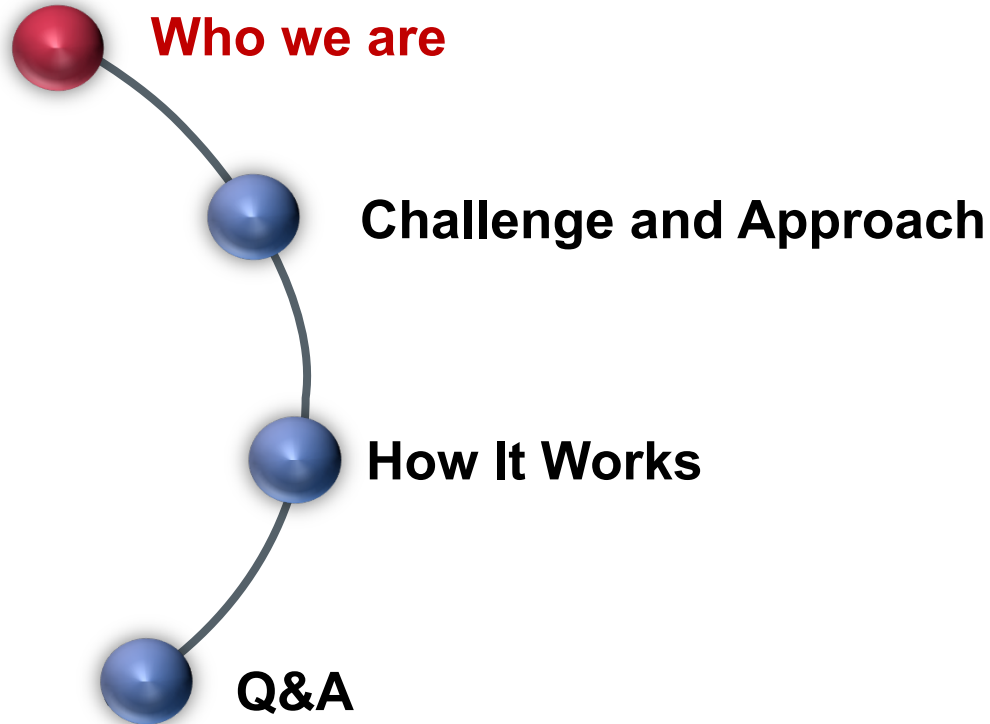


Interfacing MES to Equipment via the PI System

Presented by **Marc Puich**
Werum Software & Systems

Agenda



Werum at a Glance



Werum AG, Headquarters, Lueneburg, Germany

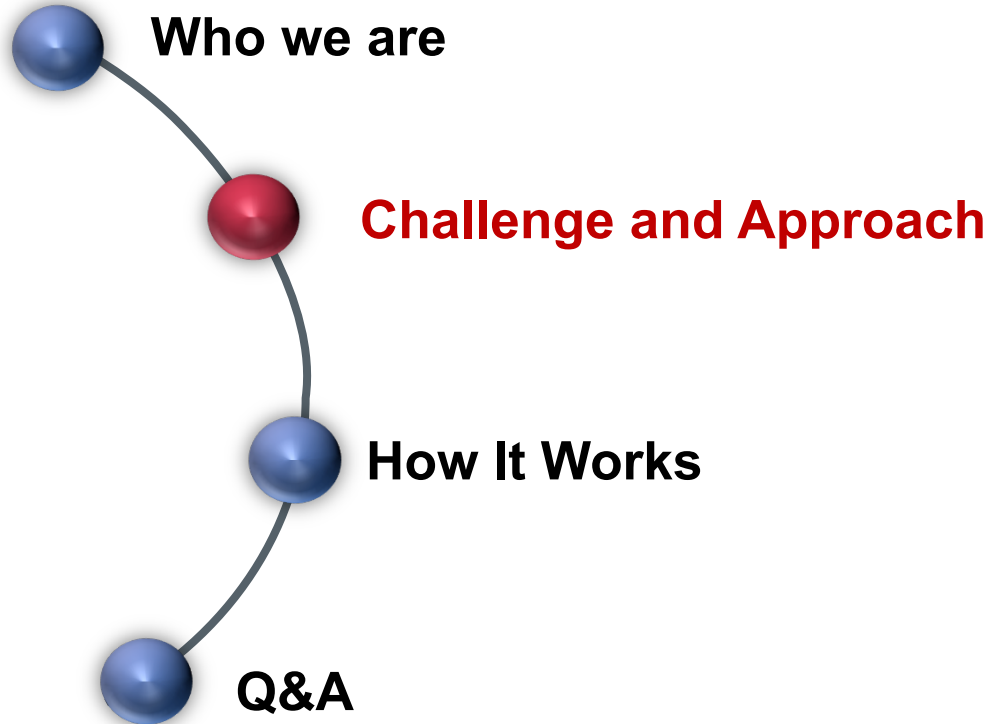
- Best-in-class MES product for Pharma & Biotech
- Professional services
- Customer satisfaction & long term partnerships

- 470+ employees
- Founded 1969
- Constant growth: 25+% per year overall
- Strong financials

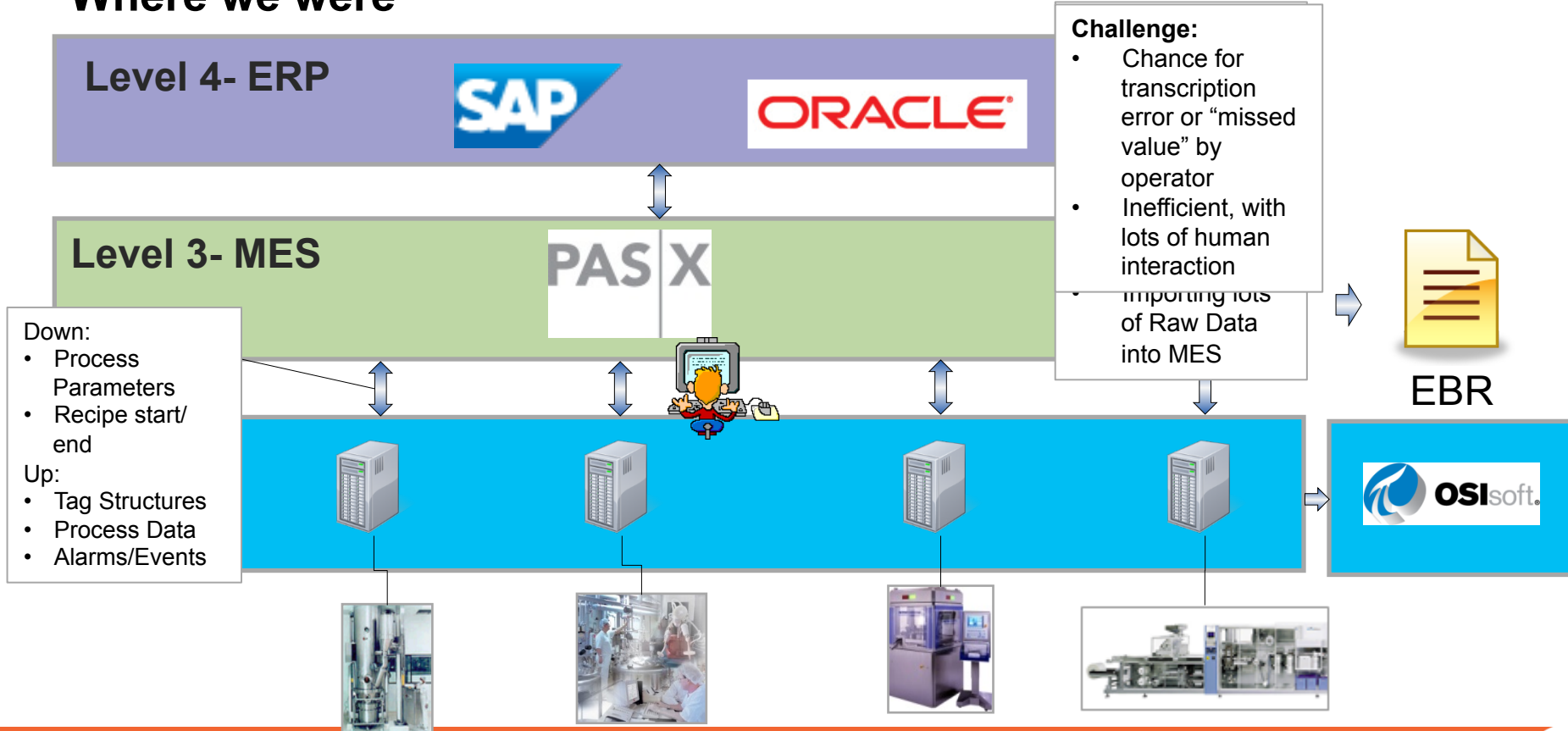


Werum America Inc., Headquarters, Parsippany, NJ, USA

Agenda



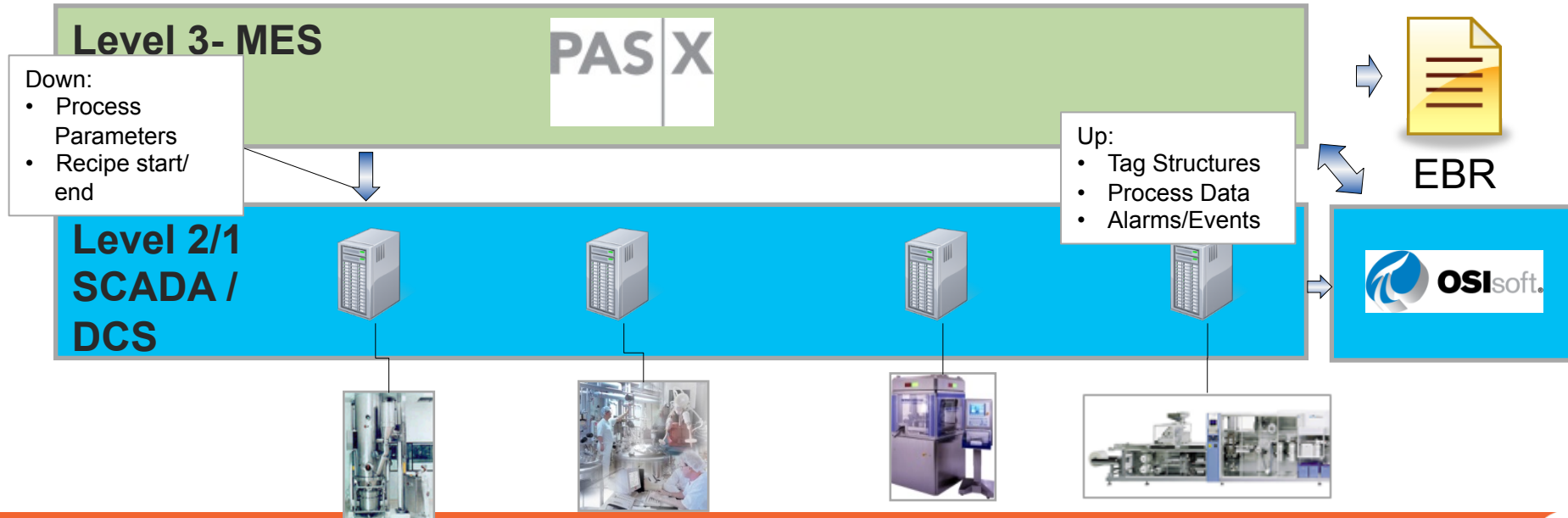
Where we were



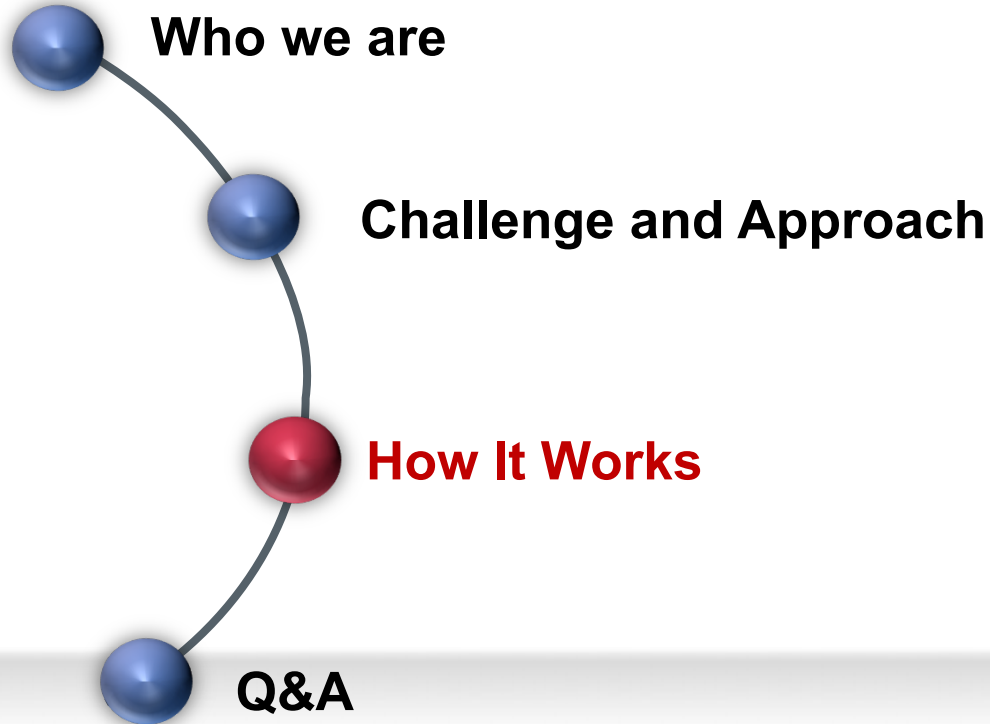
A Better Approach

Benefits:

- Leverages existing OSI connections
- Reduced validation / maintenance efforts
- **Easier management of statistical data**



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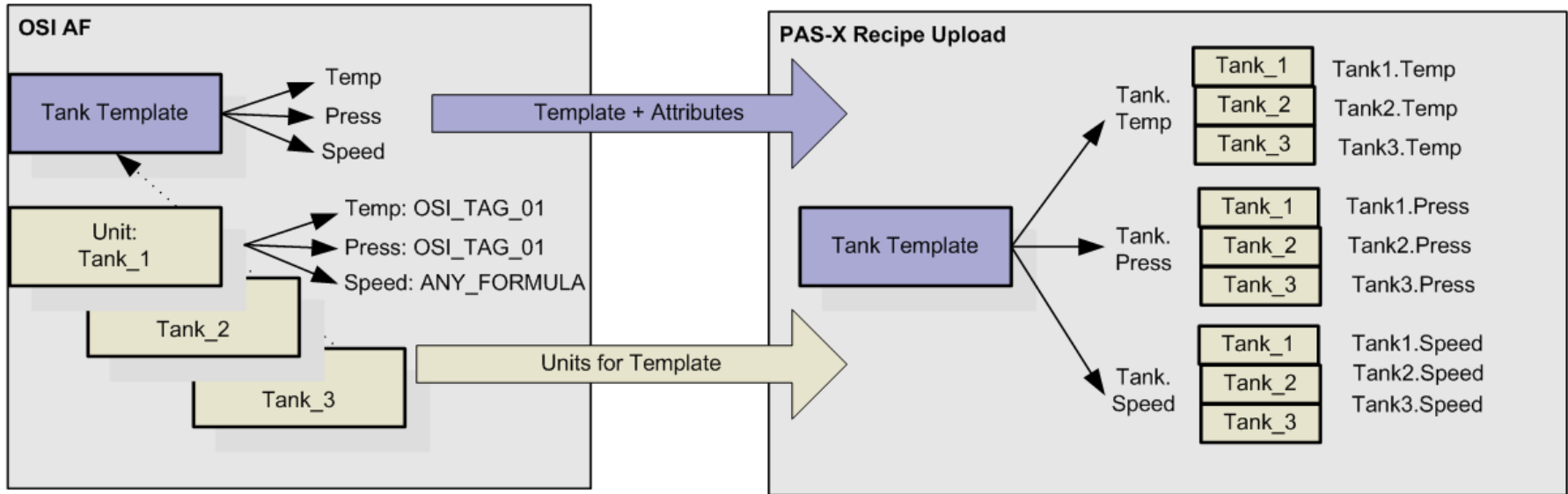


Werum has developed a PI System adaptor to support:

- Configuration of the Interface
 - Upload of all defined PI AF Tags to PAS|X, for use in recipe building and EBR execution
 - Upload **PI AF Aliases** for proper handling of process data for equivalent equipment sets
- EBR Execution and CPP/CQA Evaluation
 - Pull Min, Max, Average for a time range
 - Alarms and Events
 - For a specific time stamp:
 - *Nearest*: valid value nearest to time stamp
 - *Interpolated*: value interpolated between the values nearest to time stamp
 - *Last*: previous valid value before time stamp (AF default)
 - *Next*: next valid value after time stamp
 - *Snapshot*: the nearest value to "Now"

Aliasing

PASX2DCS OSI AF Upload Structure Schema



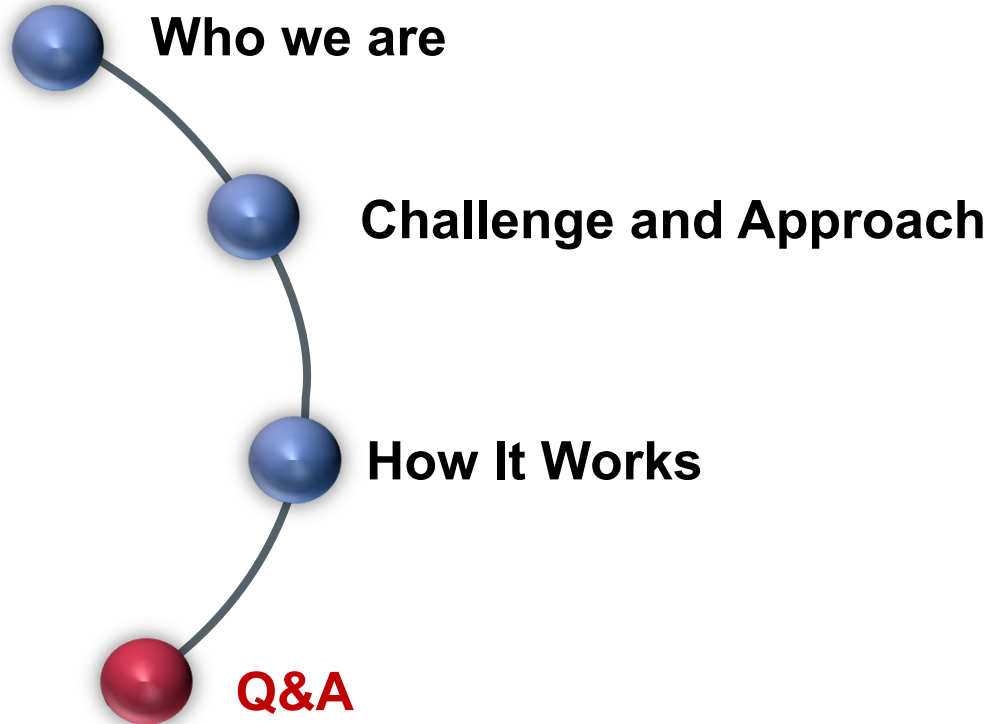
PAS|X works with the following PI System Products

- PI Server: provides basic process data for EBR
- PI Application Framework (AF): allows more sophisticated data structures for EBR population
- PI Batch: needed for aligning PAS|X and PI System Batch / Recipe data
- PI Interface to Werum PAS|X MES: Use for reading data *from PAS|X to PI*
 - Utilizes PAS|X extensive external data model

Some things to consider...

- This approach does not work for near real-time data exchange between Level 2/1 and Level 3 (i.e., synchronized actions)
 - For those interactions, direct connection to equipment is still necessary
- Future use of PI Event Frames can replace less elegant PI AF / PI Batch approach

Agenda



Thank you!



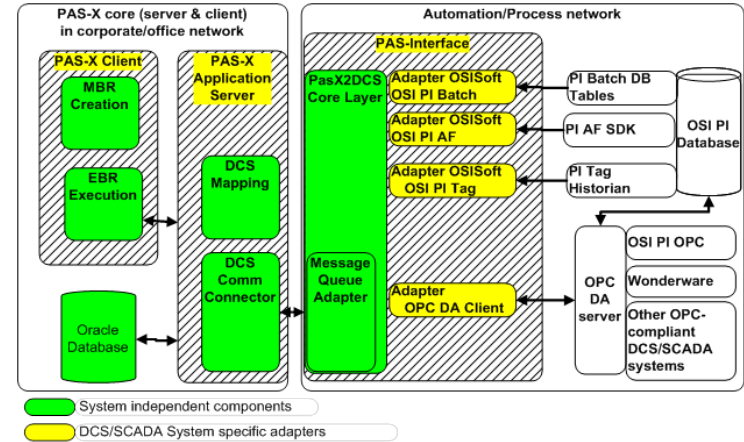
marc.puich@werum.com

Sr. Vice President, Sales and Program Management
Werum Software & Systems

Summary: Using the PI System as a Platform for MES Integration

We have found our customers leveraging the historians capabilities to greatly reduce the cost and effort in integrating the MES to the shop floor equipment.

Marc Puich



Business Challenge

- Provide our customers a rapid and cost effective approach to capturing key process data electronically in the Electronic Batch Record

Solution

- Using a specialized adaptor, users can selectively pull CQAs and other critical data from the OSI PI rather than requiring 2 way interfaces to all process equipment

Results and Benefits

- Lower cost of ownership
- Faster implementation time
- Reduced deviations