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EMEA USERS CONFERENCE

BERLIN, GERMANY • SEPT 26-29, 2016



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Programming Tools for the PI System

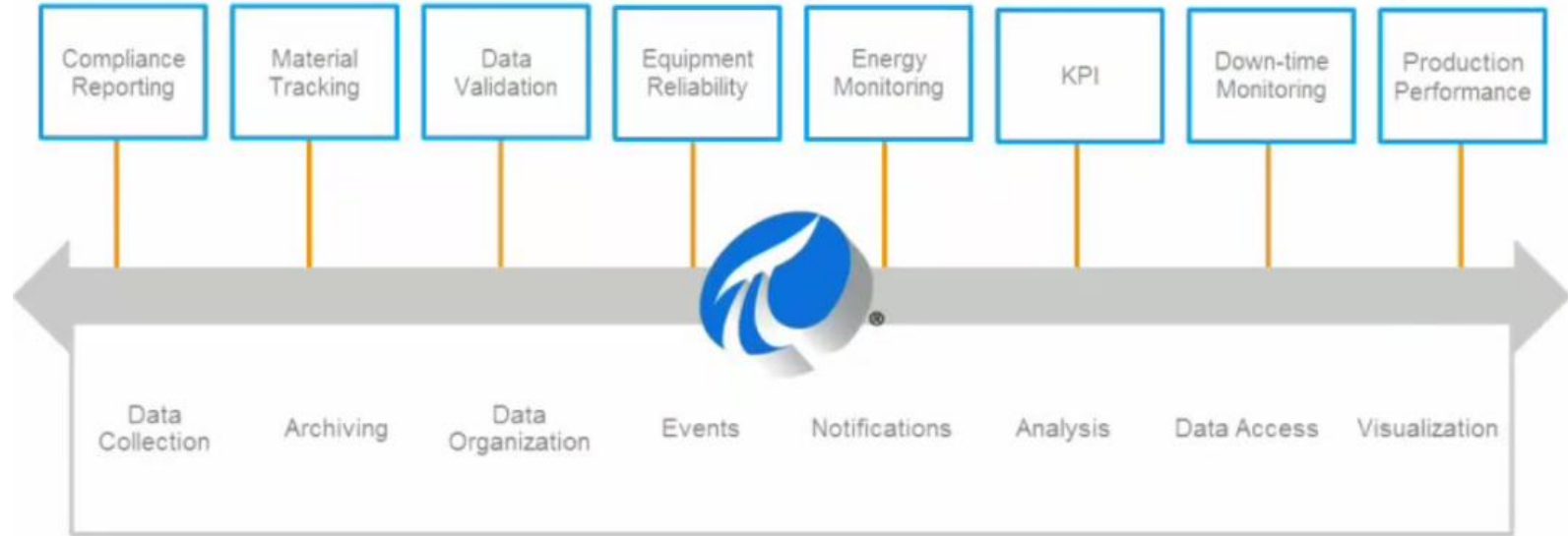
Presented by **Ray Verhoeff, OSIsoft**
Patrice Thivierge, OSIsoft



Topics

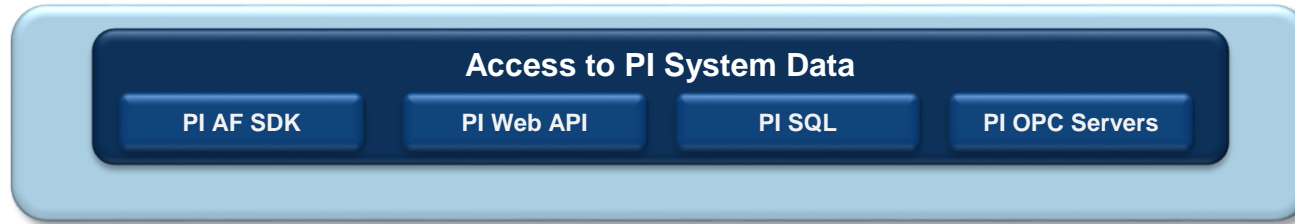
- The need for PI System applications
- PI Developer Technologies
- Software Licenses
- PI Developers Club
- The OSIsoft open source experience

OSIsoft does not build everything...



What are PI Developer Technologies?

- Programmatic access to the PI System
- PI System's "surface area"



PI AF SDK	.NET Framework Toolset
PI Web API	REST-based Service Layer
PI SQL Framework	SQL Data Access Products
PI OPC Servers	OPC DA/HDA Standard

Categories

Designed by OSIsoft

Object Oriented

- AF SDK

Service Oriented

- PI Web API

Designed by Standards Groups

SQL Standards

- PI OLEDB Provider
- PI OLEDB Enterprise
- PI ODBC/JDBC

OPC Standards

- PI OPC DA Server
- PI OPC HDA Server

Applications You Might Build

- Desktop applications
- Mobile applications
- Business system integration
- Web services:
 - Much like PI Web API but built by you based on your own service designs
 - Same requirements as us:
 - Performance, scalability
 - Security
 - Large number of users

License Types

Open

- Developer documentation made publicly available
- No fee associated with the PI Developer Technologies
- PI Developer's Club membership no longer required

Restricted

- Technologies that extend the PI System's internal behaviors
- Help you make good decisions around usage of these technologies
- Paid membership to PI Developer's Club required to request access

What Open License means

- OK to use PI Developer Technologies to build applications at no charge
- OK to blog about (your) code
- OK to post open-source projects that use PI Developer Technologies

Fine print from our lawyers...

- You may not redistribute our SDKs
- You may not decompile or reverse-engineer
- You need a licensed PI System to develop
 - Your site PI System is fine
 - Paid PI Developer's Club membership is another way to get this
- You still need a PI System Access (PSA) license to deploy



PI Developers Club

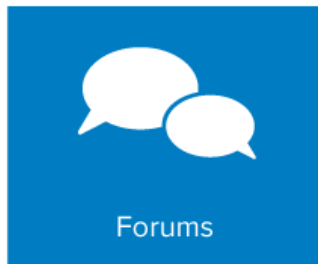
**A Community and
Resources for developers**



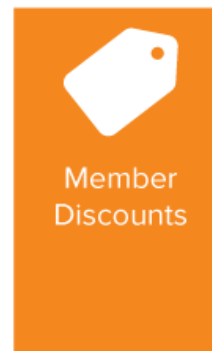
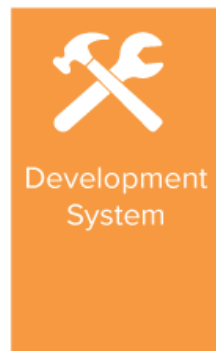
PI Developers Club

A dedicated space for PI developers on PI Square

Freely Available



Paid Subscription



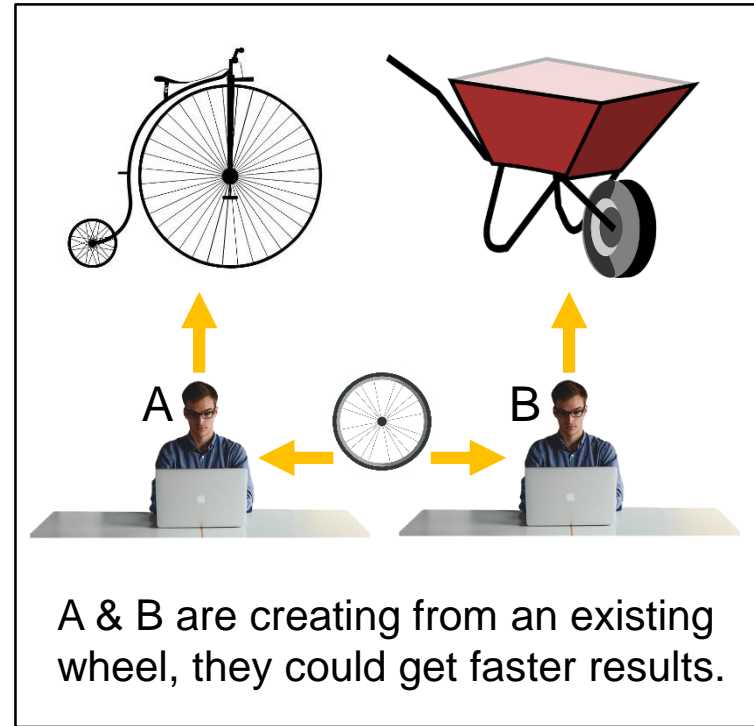
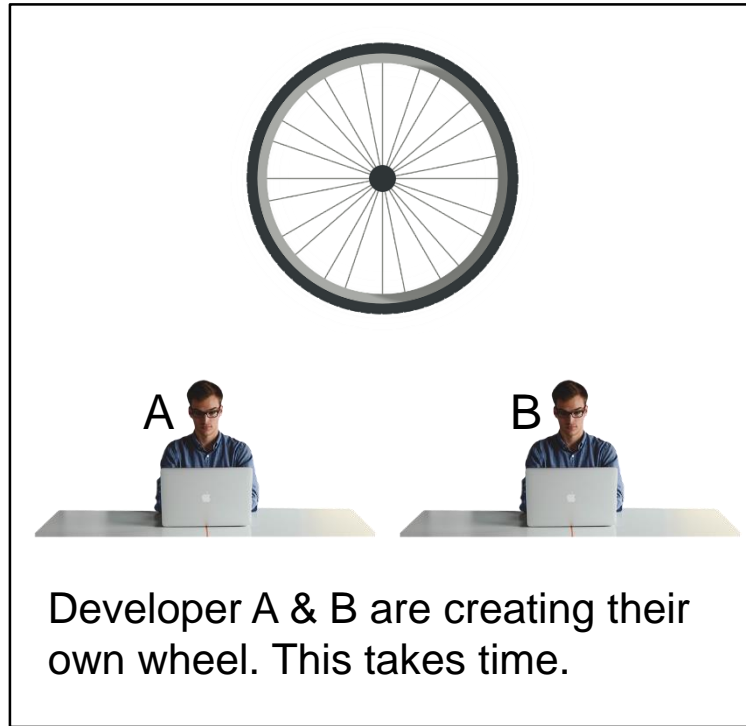
See the [PI Developers Club FAQ](#) for more details



Open Source as a Tool



Why creating Open Source content matters?



Open Source allows to leverage existing code, adapt it, and build bigger things, faster

Why creating Open Source content matters?

- Code is publicly available
 - Code can be re-used*
 - Code can be adapted or improved*
 - *As long as a proper license is applied to the code
- Peer reviews and comments,
- Don't re-invent the “wheel”

How do we do Open Source?

- Apply a **licence** to your work
 - Important to explicitly **define what your code can be used for**
 - No License = Intellectual Property to the creator
 - To limit your liability
 - To prohibit the usage of your trademark
- OSIsoft Open Source Projects = Apache 2.0

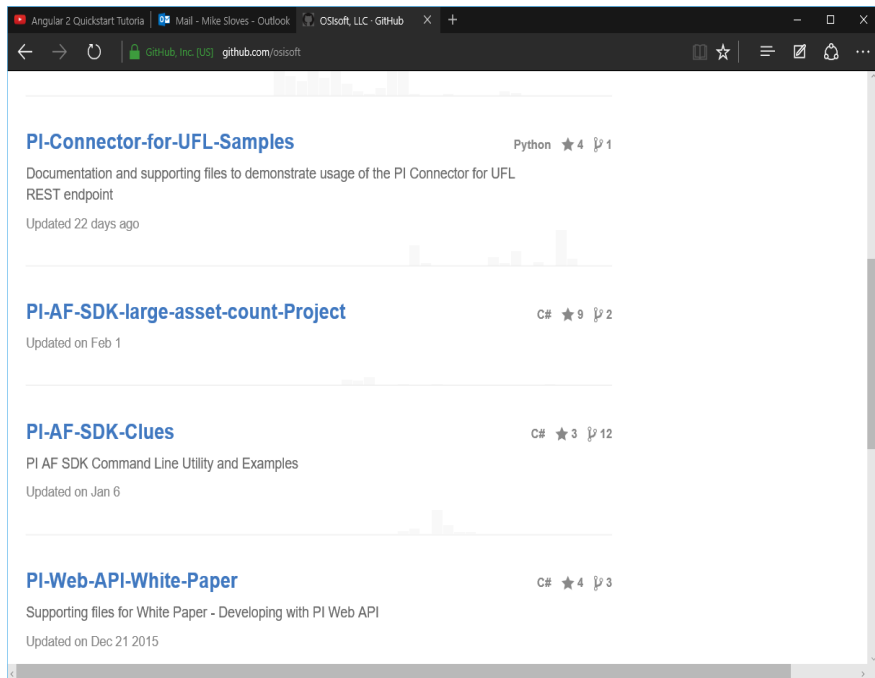
How do we do Open Source?

- **With a Tool to enable developers to share and contribute**
 - Cloud-based source code control
 - Collaborative code review
 - Integrated issues tracking

GitHub



github.com/osisoft



17 Projects and growing!



Interesting community project
pysquare.osisoft.com/tags#/?tags=github



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Contributing to a GitHub
Repository

How to Work with the PI Community

PI Developers Club	GitHub repository
<ul style="list-style-type: none">• Blog post• Describe the project, its goals• High Level overview• Tag your post « github »• Link to GitHub Repository	<ul style="list-style-type: none">• License File (Apache 2.0)• Boilerplate notice in all files• Create a Readme:<ul style="list-style-type: none">• Brief description of the project• Link to PI Square blog post• Technical details• Explain how you expect contributions



For more details see the [GitHub Guidelines](#) on PI Square



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Tools and Links



PI Web API Helpful Tools

- Chrome Developer Console
- POSTman (for Chrome)
- Advanced REST Client (for Chrome)
- PI Web API built-in Programmer's Reference

PI SQL Technologies Helpful Tools

- PI Developers Club
 - [PI SQL Data Access Technologies subspace](#)
- Technical Support website
 - Downloads, Supporting Files
- [OSIsoftLearning](#) channel on YouTube
- GitHub Samples
 - Calling PI OLEDB from [C#](#) and from [PowerShell](#)
- PI SQL Commander
 - Query Compendium

Useful Links – PI Developer Technologies

- [Overview on the Technical Support website](#)
- [Product Roadmap](#)
 - Look for the “Developer Technologies” group
- [PI Developers Club](#)
 - Part of [PI Square](#)

Useful Links – GitHub & Open Source initiatives

- Code samples on GitHub
 - See OSIsoft's organization at <http://www.github.com/osisoft>
 - GitHub Guidelines
 - <https://github.com/osisoft/contributing>

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Questions

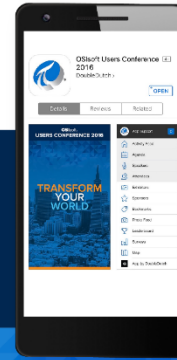
Please wait for the **microphone** before asking your questions



State your **name & company**

Please remember to...

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감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado



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