Lightning Round Talks

OSIsoft's Call for Collaboration - C4C

Innovation Showcase for 2017

Insight into what's coming in 2018

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What is a Call for Collaboration – C4C ?

- It is similar to an internship but much more
- Getting Students – RTW – Ready to work
- We feel - People with data can transform their world - Turning Data into Intelligence

https://www.youtube.com/watch?v=WGncRDy_qS0

Innovation Showcases – 2017

UCDAVIS

VIRGINIA TECH

PennState

Frank Lee

Denis Gracanin

Ashkan Negahban

Frank Lee

OSIsoft Intern, UC Davis / Electrical Engineering

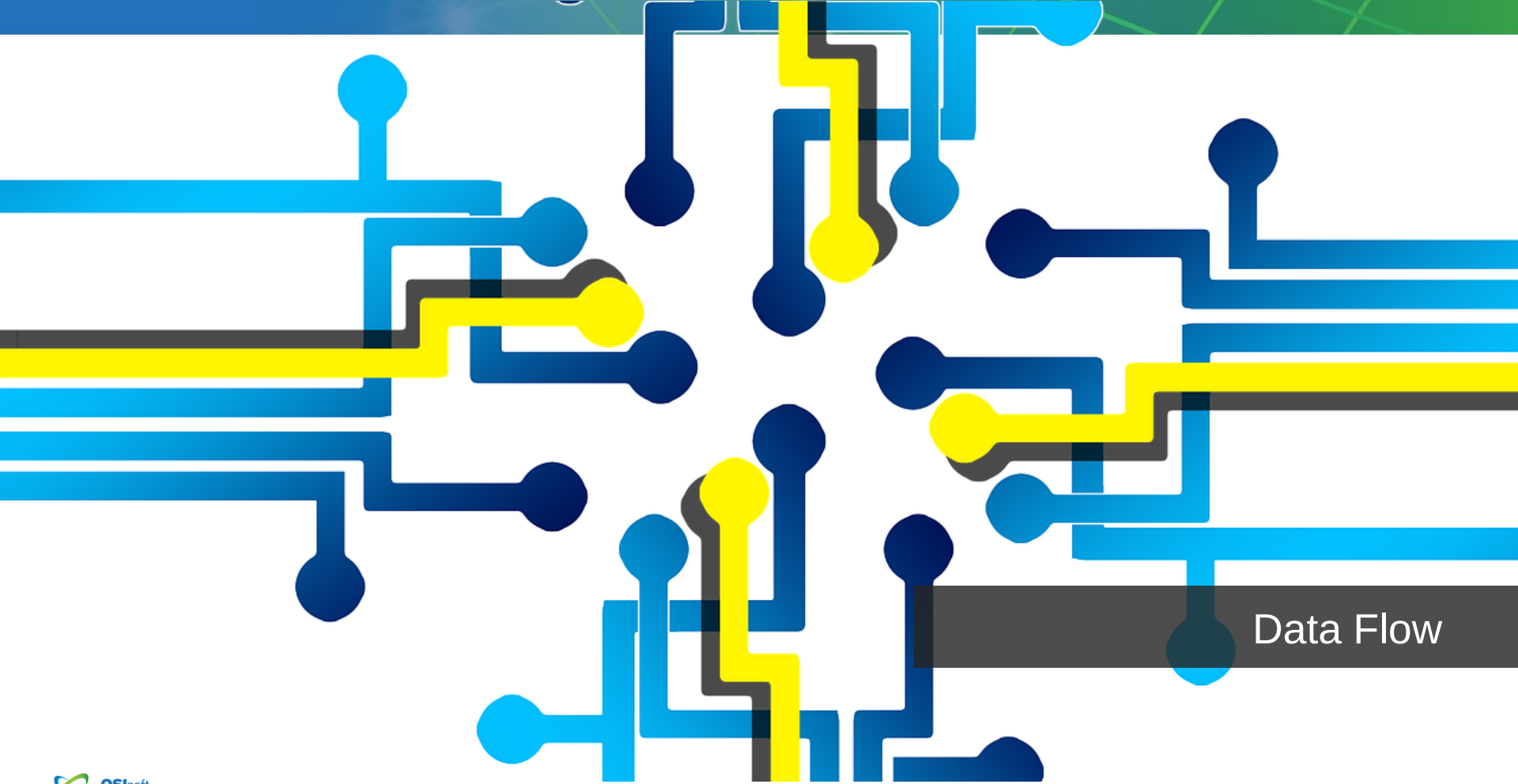
Unitrans Bus Project

About Me

- UC Davis / Electrical Engineering
- Junior
- Customer Support Engineer Intern
- **Bus driver at Unitrans for 1.5 years**
  - **Unitrans = Public transportation system in Davis**

Project overview

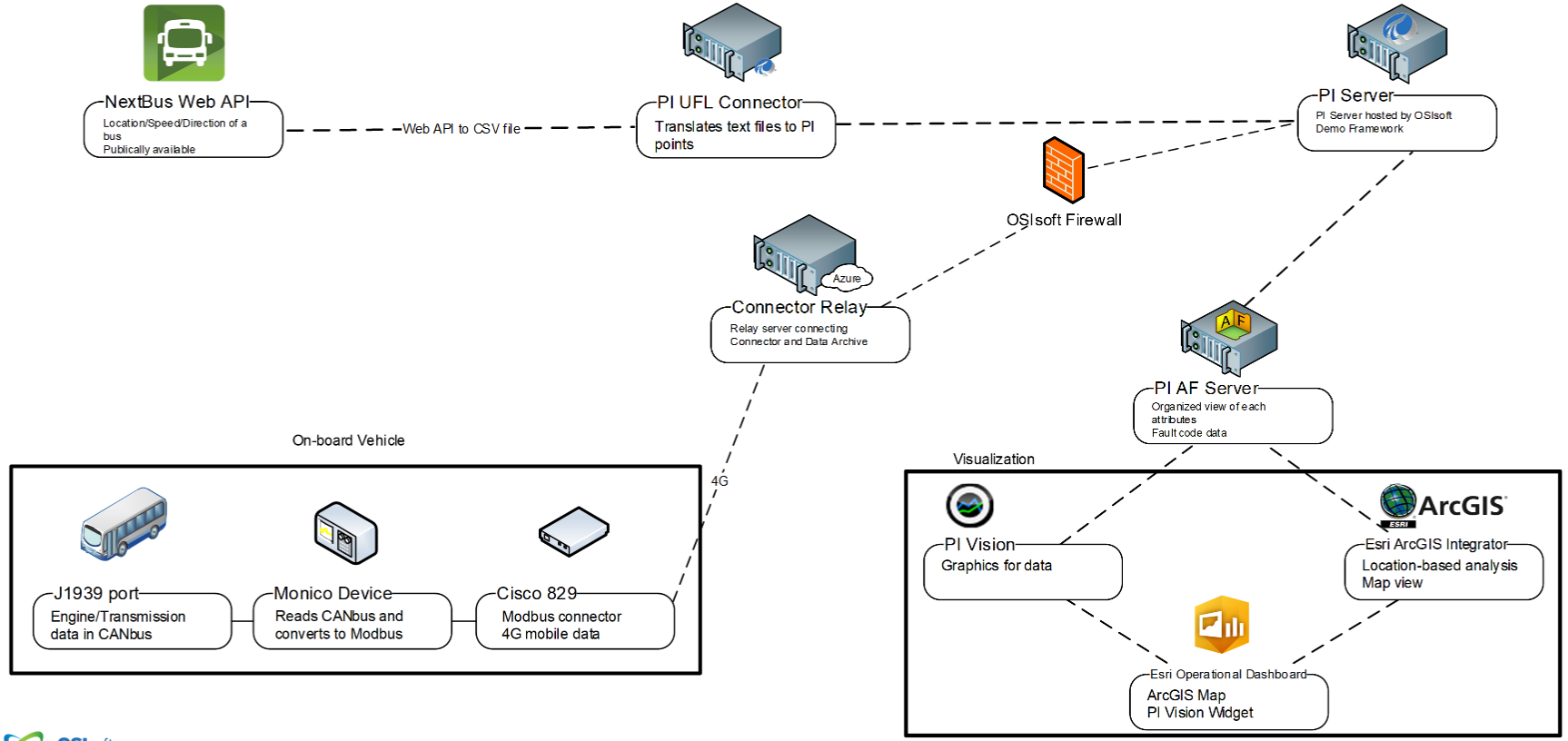
- Monitor buses in real time
- Collect attributes that can help maintain the buses
- Engine data, fault codes, GPS
- Visualize the data to help the maintenance team

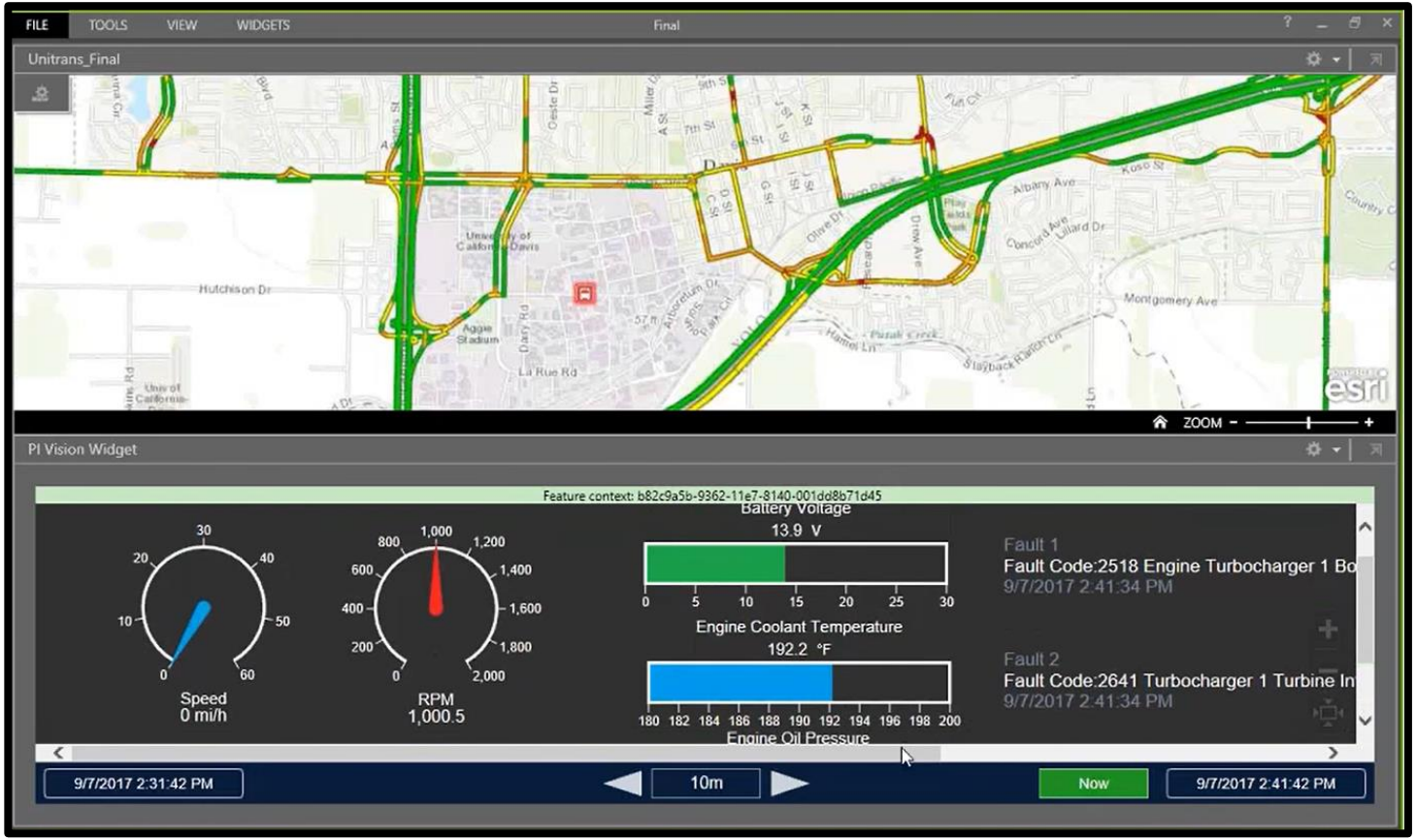


: Physical connection

: Virtual connection

Unitrans Bus Project
Data Flow





DFSBNotifications@osidf.int

to me

As of 4/11/2018 10:49:34 AM Pacific Daylight Time (GMT-07:00:00), the bus has a fault light on with the following description:

Fault Code:2518 Engine Turbocharger 1 Boost Pressure Sensor - Voltage Below Normal or Shorted to Low Source

Impact

- Reduce the time for road-call procedure
  - Fault light → Driver pulls over and calls for Dispatch → Drive back to the shop(check engine) OR Wait for shop assistant(stop engine) → Shop plugs in laptop to check fault code description → Bus switch
  - Takes ~20 minutes (Some cases are as far as 10 miles round trip)
  - Immensely disrupts service

- Compatibility with other vehicles with J1939 port

Merci

谢谢

Danke

Спасибо

Gracias

Thank You

감사합니다

ありがとう

Grazie

متشكرم

Obrigado

Denis Gracanin

Virginia Tech Professor, Department of Computer Science

VIRGINIA TECH™

Virginia Tech FutureHAUS

The ‘Internet of Things’ Research Project

The **aim is to fully integrate** advanced digital systems, physical data and physiological data with the electronics within the house.

We are addressing **“User interaction with a smart built environment.”**

Virginia Tech has been selected to participate in the **“2018 Solar Decathlon Middle East”** in Dubai.

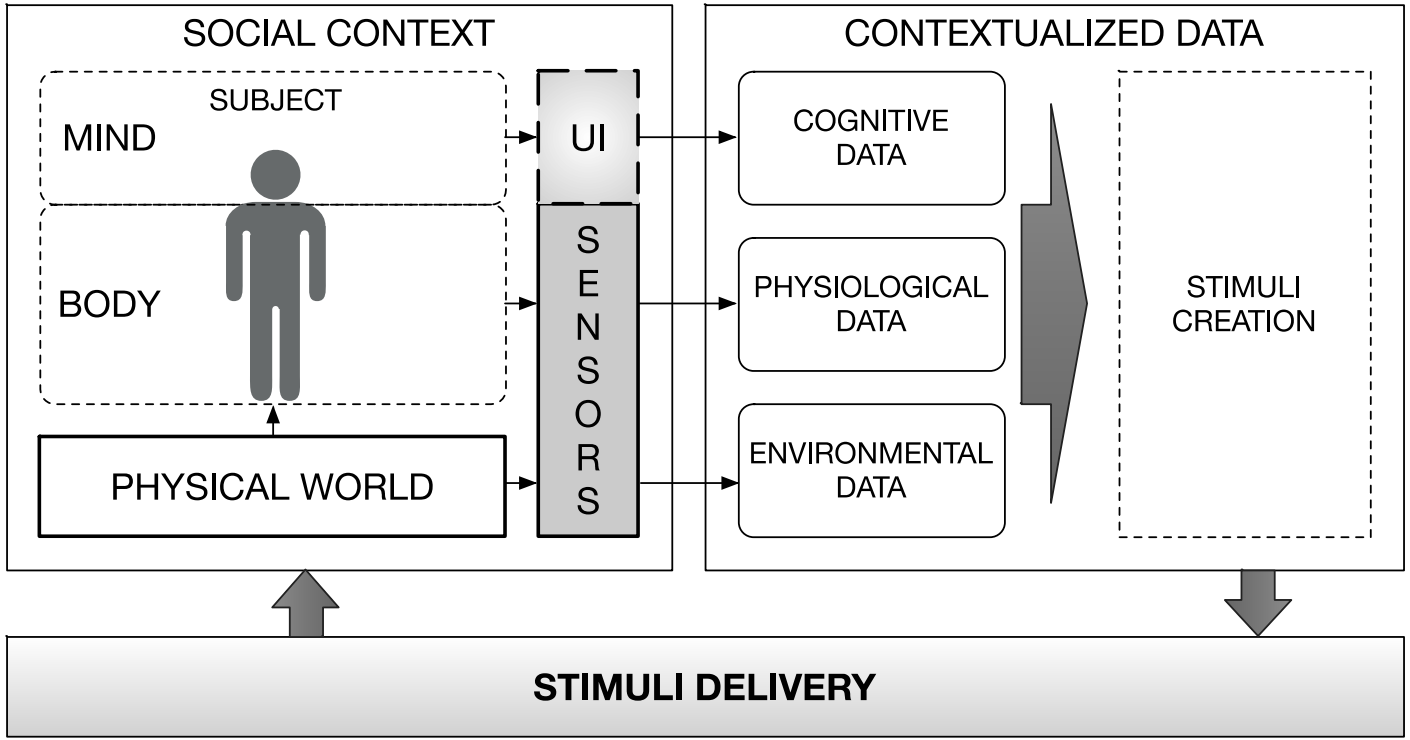
Goals

Providing **customized and adaptive user interfaces** and interactions can improve the user's performance.

We need to move from typical human-computer interaction to **human-environment interaction** in a smart built space populated by smart things.

How to develop support for a living ecosystem of services, **a service framework**, to support interactions with a smart built-environment?

Framework



Using OSIsoft

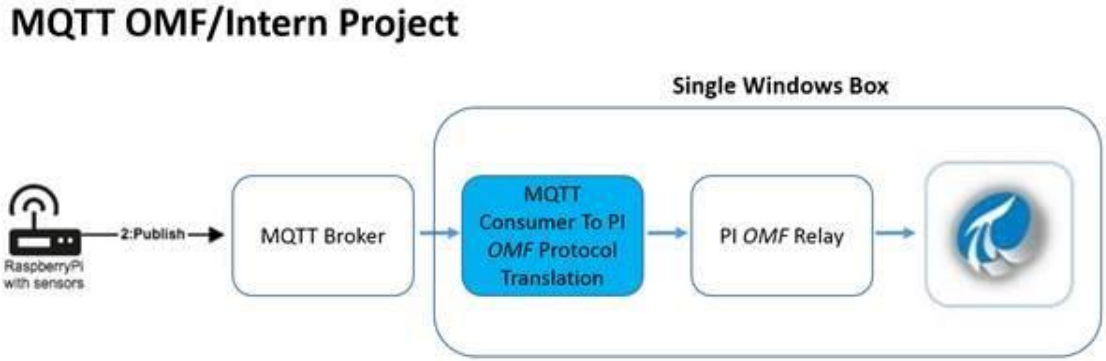
- Collecting **real-time environmental and physiological data** to provide feedback to the user.

- Real-time and longitudinal data analysis to help with the **emotion and behavior recognition** within the architectural and social context.

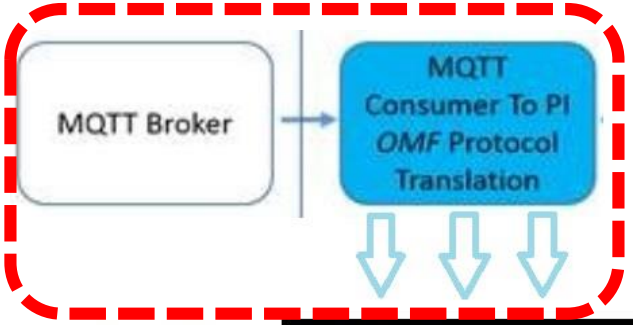
- Providing support for **embodied cognition**: interplay between brain, body and world.

Virginia Tech FutureHAUS

- **Raspberry Pi** is used to collect data from the sensors and send them over to the **MQTT server/broker** using **MQTT protocol.**
- **MQTT to OMF Translator**



Virginia Tech FutureHAUS – Data Flow

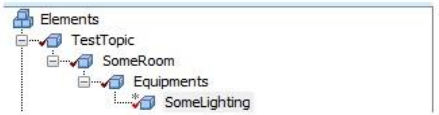


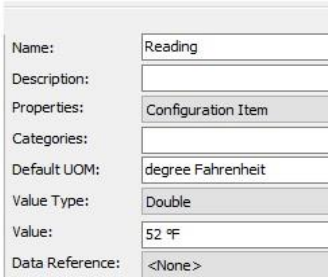
1. Consumes the payload, containing the topic and the data

Sample Payload:
'TestTopic/SomeRoom/Equipments/SomeLighting
52 F

2. Format the OMF Data appropriately based on the topic / message of the payload

3. Send it through the relay, creating an AF Hierarchy / container containing the correct data





Clients **publish** the sensor data as a **message** to the **broker/server** under a **topic**

Our connector script **subscribes** to these topics to **receive** messages

Lessons Learned

- Using the MQTT connector application to provide **semantic description** for environmental and physiological data.
- Exploring the effects of sampling rate and number of topics.
- Integrating with the FutureHAUS control system.

Visualization - Continued Work

- We are working on creating a **Dashboard** for FutureHAUS with Visualizations from “PI Vision”

- The plan is to develop an **interactive display** that could **publish data back** to the server using buttons from the UI

  e.g. – Sending command to “Turn_On” the Light

Merci

谢谢

Danke

Спасибо

Gracias

Thank You

감사합니다

ありがとう

Grazie

متشكرم

Obrigado

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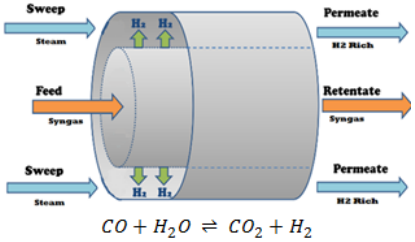
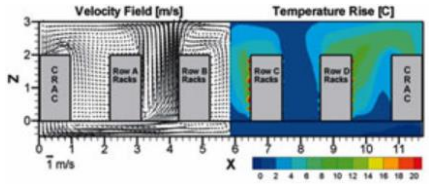
Obrigado

Insight into what's coming in 2018 & beyond

West Virginia University



Georgia Institute of Technology



UCF UNIVERSITY OF CENTRAL FLORIDA

THE UNIVERSITY OF UTAH

THE UNIVERSITY OF TENNESSEE KNOXVILLE

Why are we doing **What** we are doing?

- Payback for the good work Universities are doing
- Pay forward to help students
- We feel it is the right thing to do
- Bring more value to our customers
- RTW – Ready to work
- 12- 18 Months of Experience
- Expand the use of PI into Data Science
- Hiring Students – OSIsoft and Cutomers
- Focused Internships

Questions

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

State your **name & company**

Merci

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Optional: Click to add a takeaway you wish the audience to leave with.