EDGEXFOUNDRY™

TSC Meeting

July 25, 2018

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Meeting Logistics

Time: July 25, 2018 7am PDT – 8am PDT

Join from PC, Mac, Linux, iOS or Android: https://zoom.us/j/983155298

Or iPhone one-tap (US Toll): +14086380968,983155298# or +16465588656,983155298#

Or Telephone:

Dial: +1 408 638 0968 (US Toll) or +1 646 558 8656 (US Toll)

+1 855 880 1246 (US Toll Free)

+1 877 369 0926 (US Toll Free)

Meeting ID: 983 155 298

International numbers available: https://zoom.us/zoomconference?m=mkFexUxEcqHlvXHw53PqScTDRvS48PiQ

** TSC calls are recorded and added to Wiki post-call

TSC – Members Present Today

Company	Name	Email
IOTech	Andy Foster	andy@iotechsys.com
ForgeRock	David Ferriera	david.ferriera@forgerock.com
Analog Devices	Doug Gardner	doug.gardner@analog.com
Mainflux	Drasko Draskovic	drasko@mainflux.com
Mainflux	Janko Isidorovic	janko@mainflux.com
The Linux Foundation	Jeremy Phelps	jphelps@linuxfoundation.org
Dell	Jim White (TSC Vice Chair)	james.white2@dell.com
IOTech	Keith Steele (TSC Chair)	keith@iotechsys.com
Samsung	Moonki Hong	moonki1.hong@samsung.com
IOTech	Steve Osselton	steve@iotechsys.com
Canonical	Tony Espy	espy@canonical.com
Dell	Trevor Conn	Trevor.Conn@dell.com

Current quorum = 8 members

*Note: TSC meetings shall require a **quorum of two-thirds of the TSC total members to take a vote or make a decision.** If a TSC meeting fails to meet the quorum requirement, discussions may proceed, however there shall be no voting or decisions.*

Today's Agenda

- MongoDB Presentation - Wednesday 25th July
- WG Updates
- EdgeX Project Visibility
- EdgeX Community Demo Update
- Next TSC F2F Meetings
- IIC/EdgeX Workshop
- Upcoming Events
- AOB

MongoDB - Presentation
Wednesday 25th July

Drew Dipalma

Working Group Chair Updates

- Around the horn
    - Core/Supporting - Trevor
    - Applications - Janko
    - Device Services - Steve
    - Test/QA - Andy
    - DevOps - Jeremy
    - Security - David
    - System Management - Jim
    - Vertical Solutions - Moonki
- Others

Core Working Group (7/25/18)

- 0.6.1 -- Additional services planned for inclusion
  - Notifications
    - Supporting blackbox tests ([PR #31](#))
  - Scheduler
    - Needs blackbox tests. Eric Cotter to engage IOTech resources.
  - Minor bug fixes
- Delhi items
  - Draft of Configuration restructuring complete, presenting @ Core WG
  - RAML Audits started
  - Service dependency handling on bootstrap started

Applications WG (7/25/18)

- Preparing the proposal for redesign of Export Services to make them more scalable and modular. (Mainflux)
- Azure IoT Hub Account
  - infrastructure@edgexfoundry.org is set up (Brett, Andy, Jeremy, Janko)
- Google IoT Account
- Delhi Features and Work:
  - Refactoring to strictly delineate internal code vs. externally usable code.
  - Use the same logging as rest of the EdgeX Services
  - Add CouchDB implementation
  - Some bug fixing

Device Services WG Update (7/25/18)

- Go SDK moving into foundry repository
- C SDK to follow
- Core data management proposal from Assaf Natanzon
  - Analysis of data handling issues
  - Further analysis to be done under Core working group

Security (7/25/18)

TBD

System Management WG (7/25/18)

- Design work underway
  - System Management Agent (SMA)
  - System Management API (per service)
- Seeking review and commentary
- https://wiki.edgexfoundry.org/display/FA/Phase+1%2C+System+Management+Delhi+Release
-

QA/Test WG Update (25/7/18)

- Current
  - All blackbox tests passing on IOTech infrastructure apart from 2 (known issue #374)
  - Complete review and merge of 5 open blackbox PRs and enure passes are at same level on EdgeX Foundry

- Next (Delhi)
  - Conclude discussions/recommendations for inclusion of blackbox tests in PR process and possible move of tests in edgex-go repo
  - Develop performance test strategy and automate tests
  - Review use of Postman/Newman as blackbox test framework, alternatives ?
  - Security testing ?

DevOps WG (7/25/18)

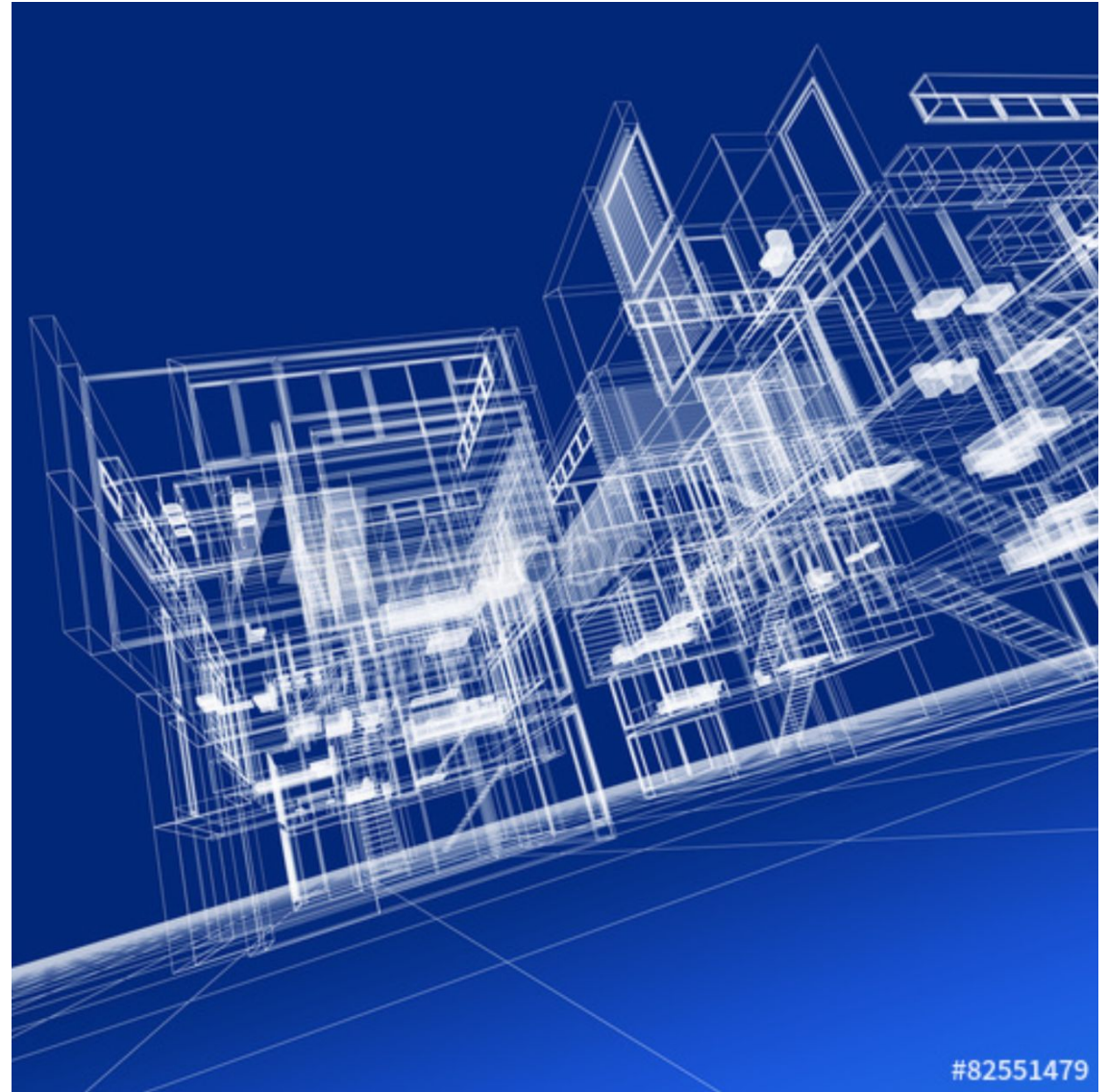TBD

EdgeX Project Visibility - Progress

Keith Steele

EDGE X FOUNDRY™

Community Demonstrator:

Showcasing the value of EdgeX in a number of Building Automation Use Cases

#82551479

IOTech

Key Demo Requirements

- Demo should convey an overall vendor-neutral position

- The overall goal is to showcase EdgeX's flexibility and ability to bring together heterogeneous solution components.

- Highlight the HW and OS-agnostic, loosely-coupled nature of the platform by featuring a series of tiered devices and gateways based on x86 and ARM silicon running several OS choices.

- Device services running on both smart sensors connecting direct to cloud and hosted on a gateway.

- Demonstration of Edge Analytics capability

- Support sensors/devices with a variety of wired and wireless protocols..

- Promote the horizontal flexibility but also put in context with 2-3 specific use cases, typically differentiated by the types of devices and applications utilized with the core.

IOTech

Demonstrator Mock Up

First Roll Out: IoT Solutions World Congress
Date: 16-18 October 2018
Location: Barcelona
Exhibitor: EdgeX Foundry

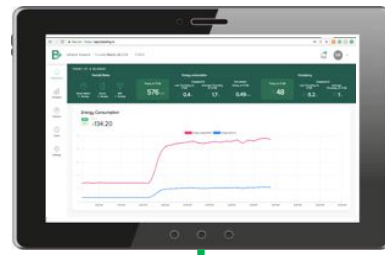Easy to comprehend and showcases flexibility of the Edge X platform

Open, Inviting, Easily Accessible

IOTech

Demo Architecture

Basking IOT Backend

Basking Demo will show analytics deployed on both the Cloud and at the edge.

Data and control

Demo will show EdgeX deployment on both x86 and ARM GW hardware. All gateways shown already supported by IOTech.

Dell 3000 or 5000 (x86)

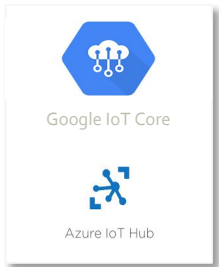Cavium GW (ARM, 64bit)

Mainflux MFX-100 Edge GW (ARM, 32 bit)

Google IoT Core

Azure IoT Hub

Data via API and MQTT connection directly to the Cloud

Data and control

Data

Data and control

Data

Wired & wireless protocol devices

CoolMasterNet **Modbus TCP** HVAC controller

EnOcean Temperature sensor

Deuta **EnOcean** Lighting Controller

EnOcean Light Level sensor

Salto Klay **API enabled** Access management

API enabled Voltaware Energy monitor

Climate control

Lighting control

Occupancy tracking

Energy Management

IOTech

Showcasing EdgeX in the Demonstrator

- Heterogeneous EdgeX southbound connectivity and interoperability to sensors and controllers with wired and wireless protocols

- Edge Analytics capability including data analysis and command response using the standards EdegX rules engine

- Heterogeneous Northbound connectivity to the cloud, including AWS, Google and Azure

- EdgeX deployment on x86 and ARM 32 bit and 64 bit GW hardware also demonstrated EdgeX distributed capbility

- Several Use Cases showcased within the Buildings Automation Market Segment illustrating EdgeX horizontal capability

- Highly professional trade show stand allowing EdgeX to be prominent and professional versus other exhibitors

Smart Building Demo Consisting of 3 Parts

The Edge intelligence

- EdgeX devices services connected to sensors and controllers with wired and wireless protocols

- EdgeX analytics including data analysis and event response

- EdgeX export services to the cloud, specifically AWS

- EdgeX deployment on both x86 and ARM GW hardware.

- Other sensors and devices are connected directly to the cloud, integrating their data with the EdgeX-connected devices

The Cloud backend

- Cloud backend running on Amazon web services, where the building automation software is hosted

- Connect to the EdgeX export services for Data and commands exchange

- IOT services for the devices connected directly to the cloud

- Allocation of devices properties, statuses, control options.

- Integration of data sources and create time series of device operational data

- Rules engine for automation of services

The Dashboard frontend

- Climate control based on occupancy, temperature level, user preferences

- Light control based on occupancy, ambient light level, user preferences

- Energy reading and management based on live energy data, and correlation with occupancy for efficiency analysis

- Occupancy tracking

- Visualization and insights

- Notifications based on events and rules

- Automation of device operations based on events or user set preferences

IOTech

Next TSC F2F Meetings

Keith Steele

EdgeX TSC F2F Meeting(s)

- Wednesday & Thursday 24th/25th October -- Location Edinburgh, UK -- [Wiki page](#)
  - Working Group technical meetups on Tuesday, October 23
- **RSVP at https://goo.gl/forms/QR3WgP4ybB5KUT3w2**
  - Current registration count: 14 in-person; 0 dial-in
  - Tuesday Working Group Counts
    - Applications: 4
    - Security: 5
    - Systems Mgmt: 1
- Hotel/Travel: https://events.linuxfoundation.org/events/elc-openiot-europe-2018/attend/venue-travel/
- For Wednesday night dinner/activity, Scotch whisky tasting!!
  - **Question:** Do times below work for the group?
    - 17:40 public Silver Tour (25 people)
    - 17:50 public Silver Tour (5 people)
    - 18:40 Private Tutored Tasting (30 people)
    - TBD - Following Tasting, head to dinner (30 people)

- April 2019 -- Location Seoul or Suwon (South Korea)

IIC Updates

Keith Steele

IIC/EdgeX Workshop

Sept 10-14
Chicago, IL

- Tuesday, September 11, 2018: 9am to 12:30pm Central Time
- Hyatt Regency O'Hare in Chicago
- https://www.iiconsortium.org/member-meetings.htm

Next Steps:
- Content Planning (see Agenda on next slide)
- Need to finalize who from the EdgeX Community is planning to attend
  - **Requested:** RSVP at https://goo.gl/forms/PJpYWyN9TfrscfOq1
    - Current RSVP count: 0

Note: Just FYI and for planning considerations for those traveling to Chicago: At the same time as IIC meeting, there is also Hannover Messe USA and Intelligent Transportation Forum (ITS) happening in Chicago. On Friday 9/15, IIC and ITS are planning some joint activities.
https://hannovermesseusa.com/

Agenda

1. **Introductions and Workshop Overview** **(10 min)**
    Speakers: Sven Schrecker, SWG Chair, Wael William Diab, Liaison WG Chair, Jason Shepherd: EdgeX (title)

2. **Overview of the IIC Liaison Working Group** **(10)**
    Speaker: Wael Diab, Senior Director, Huawei Technologies

3. **Overview of EdgeX Foundry Initiatives/Activities** **(10)**
    Speaker: Keith Steele (title)

4. **IIC Security Initiatives** **(30)**
    Speakers:

5. **EdgeX Architecture/Security Overview** **(30)**
    Speakers: Jim White/ David Ferriera

6. **Break** **(15)**

7. **Joint IIC/EdgeX Activities** **(15)**
    Speakers: TBD

8. **Panel Discussion & Q/A on Collaboration/Way Forward(55)**
    Moderator: Sven Panelists: all presenters

9. **Closing** **(5)**

Total: 3 hrs

Upcoming Events

Upcoming Events - Confirmed

- Open Source Summit North America, August 29 - 31, 2018, Vancouver, Canada
  - Community Partner: Save 15% on Attendee Registration with discount code OSSNA18COM15
- EdgeX / IIC Workshop, September 11, 2018, Chicago, IL
  - Hosted jointly by:
    - IIC Security (Chair: Sven Schrecker, Intel)
    - Liaison Working Group (Chair: Wael William Diab, Huawei)
  - EdgeX Liaisons: James Clardy, NetFoundry, Riaz, Salim AbiEzzi VMware
- Open Networking Summit Europe, September 25 - 27, 2018, Amsterdam, Netherlands
  - Community Partner: Save 15% on Attendee Registration with discount code ONSEU18COM15
- IOT Solutions World Congress, October 16-18, 2018, Barcelona
  - CFP and Call for Testbeds have closed. Email pr@edgexfoundry.org if you were selected so that we can track/promote
  - EdgeX has secured a booth (call for booth staff volunteers will follow)
    - Community Demo will debut at the show
  - Who is planning to be on-site?
    - Brett Preston (LF), Keith Steele (IOTech), Michael Hall (LF) ...

Upcoming Events - Confirmed (continued)

- Open Source Summit Europe, October 22 - 24, 2018, Edinburgh, UK
  - Community Partner: Save 15% on Attendee Registration with discount code OSSEU18COM15
  - Schedule announced August 14
- ELC / OpenIoT Summit Europe, October 22 - 24, 2018, Edinburgh, UK
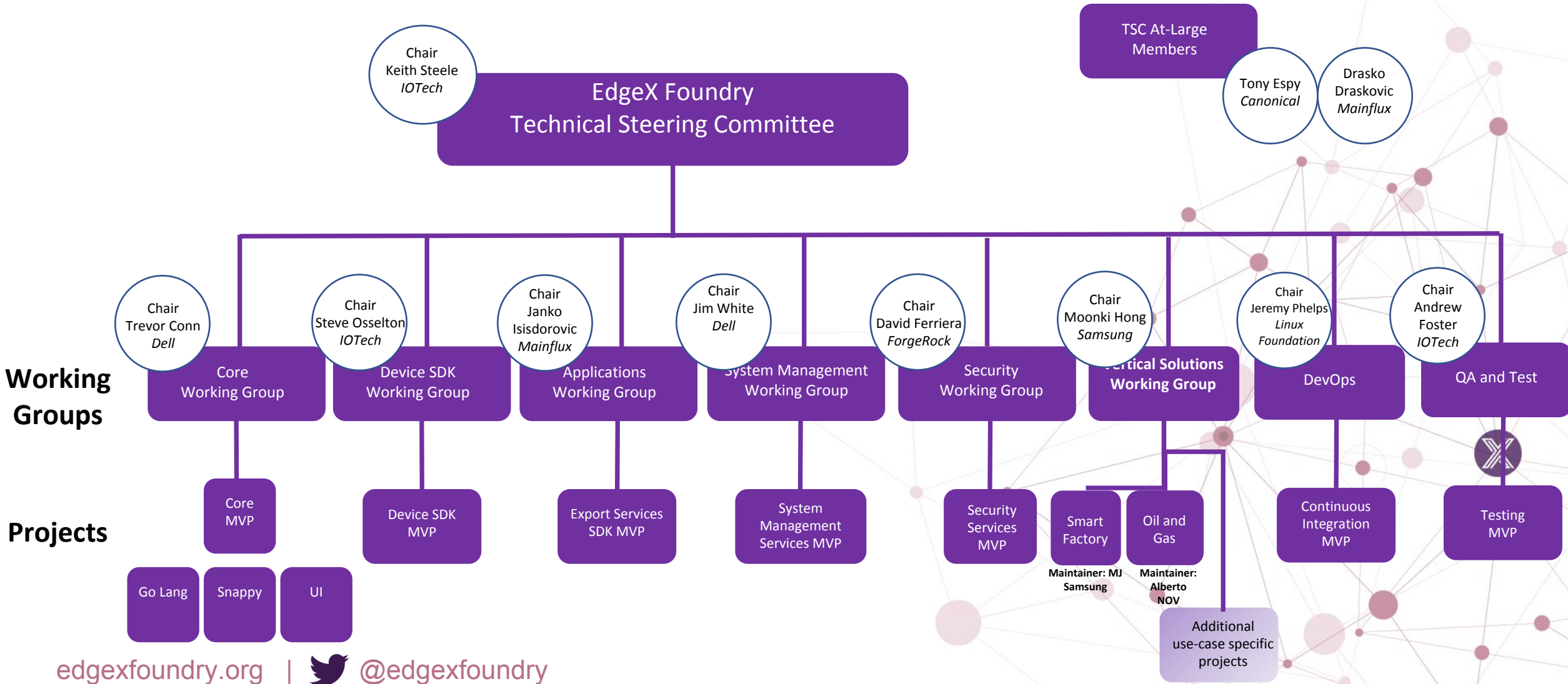 - Schedule announced August 14

AOB / Reminders

AOB/Cadence

- Meeting Cadence Reminder
  - Currently held weekly at 7am PDT on Wednesday's
  - Calls without TSC quorum will still be used to review issues

- **Next Meeting: August 1, 2018**

EdgeX Project Organization

EDGE X FOUNDRY™

Chair
Keith Steele
IOTech

EdgeX Foundry
Technical Steering Committee

TSC At-Large
Members

Tony Espy
Canonical

Drasko
Draskovic
Mainflux

Working Groups

Chair
Trevor Conn
Dell

Chair
Steve Osselton
IOTech

Chair
Janko
Isisdorovic
Mainflux

Chair
Jim White
Dell

Chair
David Ferriera
ForgeRock

Chair
Moonki Hong
Samsung

Chair
Jeremy Phelps
*Linux
Foundation*

Chair
Andrew
Foster
IOTech

Core
Working Group

Device SDK
Working Group

Applications
Working Group

System Management
Working Group

Security
Working Group

Vertical Solutions
Working Group

DevOps

QA and Test

Projects

Core
MVP

Device SDK
MVP

Export Services
SDK MVP

System
Management
Services MVP

Security
Services
MVP

Smart
Factory

Oil and
Gas

Continuous
Integration
MVP

Testing
MVP

Go Lang

Snappy

UI

Maintainer: MJ
Samsung

Maintainer:
Alberto
NOV

Additional
use-case specific
projects

edgexfoundry.org | @edgexfoundry

Marketing

- **CTA:** If your company will be presenting EdgeX at an upcoming event/webinar/other, please email pr@edgexfoundry.org so that we can help promote

EdgeX Use Case Campaign
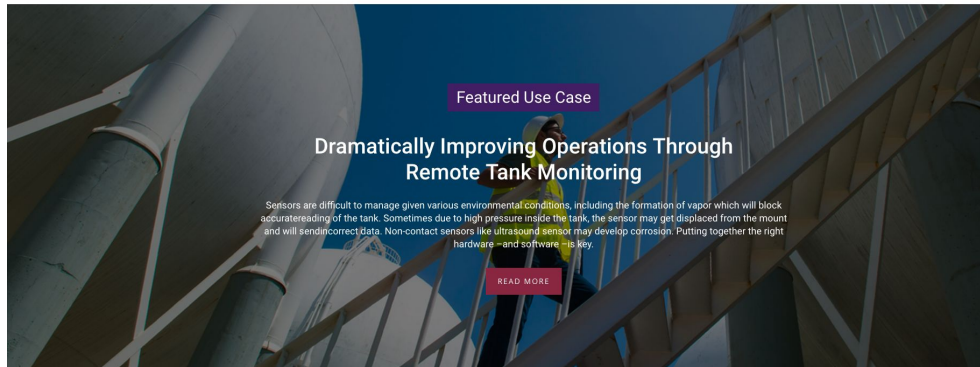
Use Cases

1. Draft site is available for review:
   - https://www.edgexfoundry.org/use-cases/
   - all passwords set to UseCase!
2. Seeking volunteers to help work in EdgeX connection
   - EdgeX specific use cases
   - examples of how EdgeX helps with a use case; which can include how a third party applies their commercial value add
   - email usecases@edgexfoundry.org to sign up

EdgeX in Market

- Page showcases momentum in the project, including solutions already available
- https://www.edgexfoundry.org/edgex-in-market/
- Email info@edgexfoundry.org if you have any additions

Project Contributions Welcome!

- Our objective is to make EdgeX use & deployment pervasive!
- EdgeX success is 100% dependent on the vibrancy of a proactive community
- Getting Involved
  - Project membership growing - want to join contact Brett Preston at LF (bpreston@linuxfoundation.org)
  - First Priority is the MVP - potential contributors please contact keith@iotechsys.com (people, equipment, technology)
  - If interested in adding new projects please contact the relevant working group chair

Project Resources

Quick links to most commonly used Community Resources

- Code: https://github.com/edgexfoundry
- Documentation: https://wiki.edgexfoundry.org/
- Discussion: https://chat.edgexfoundry.org/
- Mail Lists: https://lists.edgexfoundry.org/mailman/listinfo
- Twitter: https://twitter.com/EdgeXFoundry
- LinkedIn: https://www.linkedin.com/company/22298339/
- YouTube: https://www.youtube.com/c/EdgeXFoundry

EdgeX - Where to learn more

- EdgeX Foundry Wiki
    https://wiki.edgexfoundry.org/display/FA/EdgeX+Foundry+Project+Wiki

- EdgeX Foundry Rocket Chat
    https://chat.edgexfoundry.org/home

- Weekly EXF Technical Spin up calls
    30 minute deep-dive topics followed by 30 minute open Q&A
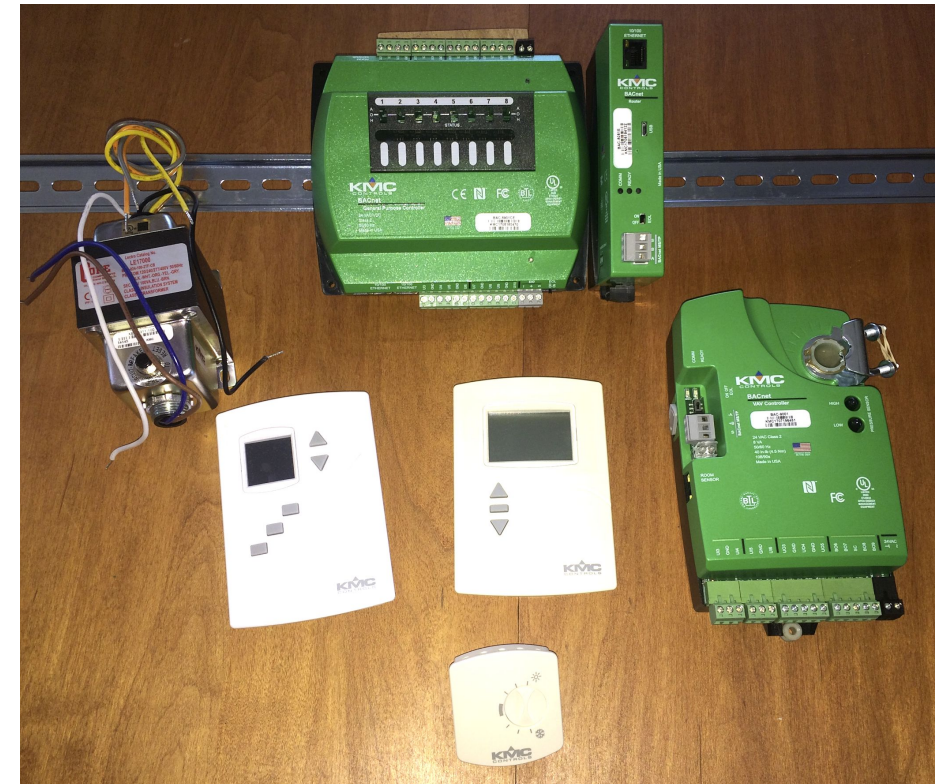   Call recordings are available on the Wiki

What is the Device Exchange?

- A great way to put your products in the hands of other members so they can help build a better EdgeX!
  - https://wiki.edgexfoundry.org/display/FA/Device+Exchange

Special thanks to Dave Bohlman and KMC Controls for making this awesome kit and how-to guide available to members!!

Meetups

- Help us grow awareness!
- Present, and Tag, EdgeX in your local IoT Meetups
- https://www.meetup.com/topics/edgex/
- Email info@edgexfoundry.org for assistance
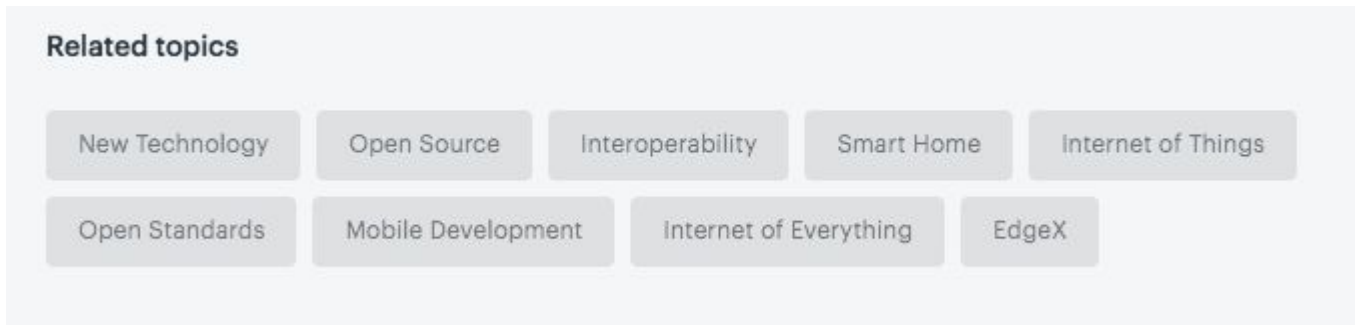
Meetups: Reimbursement Program

- https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=7602724
- Wiki page built for the community to leverage
- Encourage community to begin introducing EdgeX in your local Meetup groups
- EdgeX Foundry will fund/sponsor the talk in which EdgeX is scheduled to be presented
  - Up to $250 for F&B, once per Meetup group, per quarter
- Let us help drive traffic to your event! Email pr@edgexfoundry.org once Meetup has been scheduled
- Post-event, please consider doing a blog about the event

Hackathons: How can you help?

- https://wiki.edgexfoundry.org/display/FA/Hackathons
- Provide any local volunteers onsite to help with technical work, potentially help judge, etc. (see list below of known hackathons coming up and locations)
- Sponsor breakfast/lunch/dinner for the participants (usually things like donuts/coffee, pizza lunch or cater sandwiches)
- Sponsor $ rewards (incentives) for teams that successfully implement projects (these could even be projects that particular sponsors want to see accomplished - we just need them scoped appropriately so as to be something that can be accomplished in a 2 day period)
- Help provide or resource hackathon winner prizes
- Sponsor or provide any swag (t-shirts, mugs, etc.)
- Provide marketing assistance

Thank You