EDGEXFOUNDRY™
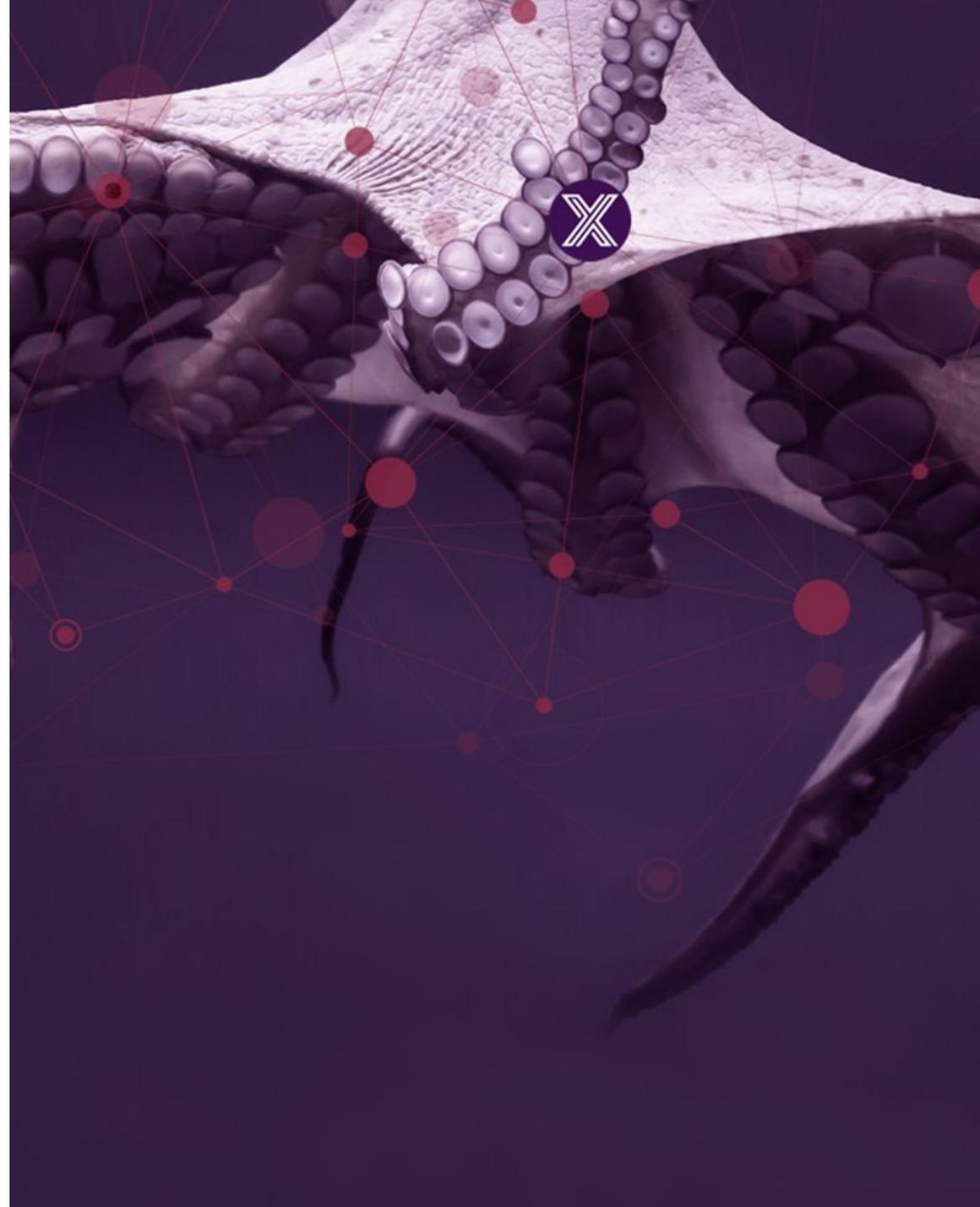
TSC Meeting

December 6, 2017

Meeting Logistics

Time: December 6, 2017 7am PST – 8am PST

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

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Examples of types of actions that are prohibited at EdgeX Foundry meetings and in connection with Linux Foundation activities are described in the Linux Foundation Antitrust Policy available at http://www.linuxfoundation.org/antitrust-policy. If you have questions about these matters, please contact your company counsel, or if you are a member of the Linux Foundation, feel free to contact Andrew Updegrove of the firm of Gesmer Updegrove LLP, which provides legal counsel to the Linux Foundation.

TSC – Members Present Today

Company	Name	Email
IOTech	Andy Foster	andy@iotechsys.com
Analog Devices	Doug Gardner	doug.gardner@analog.com
Mainflux	Janko Isidorovic	janko@mainflux.com
Dell	Jason Shepherd	Jason.A.Shepherd@dell.com
The Linux Foundation	Jeremy Phelps	jphelps@linuxfoundation.org
Dell	Jim White	james.white2@dell.com
IOTech	Keith Steele	keith@iotechsys.com
Samsung	MyeongGi Jeong	myeong.jeong@samsung.com
VMware	Salim AbiEzzi	salim@vmware.com
Canonical	Tony Espy	espy@canonical.com
Samsung	Uze Choi	uzchoi@samsung.com

Current quorum = 7 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

- TSC F2F Meeting (January)
- Finalize Oil & Gas Work Group Setup
- TSC Speaking Opportunity (OpenIoT Summit)
- Core WG Update
- QA/Test WG Update + Documentation Proposal
- AOB

TSC F2F Meeting

Keith Steele / Brett Preston

January 16-18, 2018 - Orlando, FL

- Wiki page: https://wiki.edgexfoundry.org/display/FA/16-18+January+2018%3A+Orlando+Technical+Meeting
- Venue secured:
  - HYATT REGENCY ORLANDO INTERNATIONAL AIRPORT
  - Negotiated Room Rate - $ > Need commitment that we will have more than 8 attendees!
- RSVP by emailing info@edgexfoundry.org
  - Note if you plan to attend in-person or by dial-in
  - Current RSVP Counts: 8 in-person / 0 dial-in

Early Agenda & Topics

- Preview Release
  - Go Services and perf #'s
  - SDK Refactor(s)
  - Blackbox testing
  - CI/Build - including ARM
  - Documentation
  - Lessons Learned/Issues

- California Release
  - Security Services/capabilities
  - System Management Services/capabilities
  - Remaining services Go replacements
  - Additional Export capability
  - Additional Device connectivity
  - SDK additions
- Performance metrics
  - Per service
  - ingestion to export
  - ingestion to command actuation
  - footprint
  - startup
  - others?
- Resourcing

Early Agenda & Topics (cont)

- Roadmap review (past California)
  - QA improvements?
  - DevOp improvements?
  - EdgeX micro service improvements?
  - Certification process
  - Messaging technology (in addition to REST)
  - Orchestration
  - east/west abilities
    - failover
    - load balancing

- Security Services
  - Overall architecture
  - Roadmap to delivery per release
- System Management
  - EdgeX Foundry system managent
    - Micro service APIs
    - "Gateway" or system lifecycle
    - Device management
  - Roadmap to delivery per release
- Resourcing

Early Agenda & Topics (cont)

- Release schedule
  - April & Oct (with exception of california release)
  - Naming of releases
- Conference Attendance
  - 2x annually business/marketing
    - Hannover Messe
    - ??
  - 1x developer focused conference
    - OpenIoT Summit
- Hackathons
-

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Oil & Gas Work Group

Any issues - doc updates - etc.

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TSC Speaking Opportunity

Brett Preston

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OpenIoT Summit

- http://events.linuxfoundation.org/events/openiot-summit
- March 12-14, 2018
- Portland, OR (USA)
- CFP now open
  - http://events.linuxfoundation.org/events/openiot-summit/program/callfor proposals
  - Deadline: Sunday, January 7, 2018
  - 1 Lab, 2 session proposals and seeking volunteers for additional sessions
  - Hackathon?

Core WG Update

Jim White

Feedback Needed

- Documentation (Andy)
- Tech talks
  - Call for their resumption
  - Topics
  - Volunteers

Updates

- Go Work
  - Core
  - Export
  - DS elements
- Testing
- DevOps
  - Container creation
  - Automated Testing
  - Arm Builds
  - Arm Testing
- Documentation
- Tutorials
  - [YouTube](#) (new Playlist: Adding a Modbus device to EdgeX)

EdgeX Product Documentation Proposal

Andrew Foster QA/Test WG Chair

Background

- Project currently uses EdgeX Foundry Wiki (Confluence) to create and maintain EdgeX related information including product level documentation (e.g. architecture, getting started, SDK pages etc.)

- As of Barcelona release *Release Notes* for each EdgeX microservice are maintained in GitHub repository under source control, written in Markdown (.md files) and referenced from the Wiki

- Proposal is to formalize the creation and management of product level documentation to enable controlled incremental improvements going forward

- Provide a simple consistent way for project contributors to create/update product documentation

- Provide a documentation generation system that can easily incorporated into product build/test/release process

- Proposal is <u>not</u> to replace Wiki – for dynamic project related content then Wiki is most appropriate

Options

- Continue to develop additional Wiki HTML pages for product documentation using confluence – doesn't address issue

- Create raw HTML files that can be placed under source control in GitHub – too difficult to write/update and difficult to represent in different formats (e.g. a PDF book)

- Choose a proprietary file based documentation format (e.g. Adobe Framemaker) – difficult to use and very costly

- Choose a markup language with plain text formatting syntax designed for easy input with any text editor e.g. Markdown or reStructuredText (reST) each has a whole host of tools that can convert marked up text to publishing formats like HTML or PDF – most open source projects are using one of these approaches

Markdown vs reStructuredText

- Markdown
  - So the best thing about Markdown is its popularity.
  - Can find tools in almost any conceivable programming language and environment for parsing and munging it.
  - Is the default markup language for StackOverflow, Reddit and Github, Markdown is probably well familiar to most developers these days.

- reStructuredText (reST)
  - reST stands out against Markdown it three main aspects:
    - It's more fully-featured - reST comes with more built-in features for writing more complex documents e.g. footnotes, tables, citations, tables of contents.
    - It's much more standardized and uniform.
    - It has built-in support for extensions
  - After the release of Sphinx has it seen serious uptake outside.
  - Github supports it for pages and wikis, and some major projects use it by default for their documentation - including the Linux kernel, OpenCV and LLVM/Clang.

Examples from Open Source Projects

- Markdown
  - https://celix.apache.org/documentation.html
  - https://github.com/edgexfoundry/core-data/blob/master/ReleaseNotes.md

- reST:
  - https://docs.readthedocs.io/en/latest/getting_started.html
  - https://hyperledger-fabric.readthedocs.io/en/release/
  - http://www.sphinx-doc.org/en/stable/

Sphinx

- Sphinx is a tool that makes it easy to create intelligent and beautiful documentation, written by Georg Brandl and licensed under the BSD license.

- Sphinx was designed to create documents written in reST but can also work with Markdown

- It was originally created for the Python documentation, and it has excellent facilities for the documentation of software projects in a range of languages. The following are key features of Sphinx:

  - **Output formats:** HTML (including Windows HTML Help), LaTeX (for printable PDF versions), ePub, Texinfo, manual pages, plain text
  - **Extensive cross-references:** semantic markup and automatic links for functions, classes, citations, glossary terms and similar pieces of information
  - **Hierarchical structure:** easy definition of a document tree, with automatic links to siblings, parents and children
  - **Automatic indices:** general index as well as a language-specific module indices
  - **Code handling:** automatic highlighting using the Pygments highlighter
  - **Extensions:** automatic testing of code snippets, inclusion of docstrings from Python modules (API docs), and more
  - **Contributed extensions:** more than 50 extensions contributed by users in a second repository; most of them installable from PyPI
  - **Themes** - Sphinx supports changing the appearance of its HTML output via *themes*.

Status

- IOTech are in the process of converting content from product related Wiki pages into reST

- Have setup Sphinx build environment and with initial theme and are generating HTML and PDF document versions

- Will have completed markup the Wiki sections/pages show by end of year

PAGE TREE
- Introduction to EdgeX Foundry
- Executive Summary
- EdgeX Foundry Microservices Architecture
  - Architecture--Core Services Microservices
  - Architecture--Supporting Services Microservices
  - Architecture--System Management
  - Architecture--Security
  - Architecture--Export Services Microservices
    - Architecture--Export Services--Client Registration
    - Architecture--Export Services--Distribution
    - Export Services - Google IoT Core
  - **Architecture--Device Services Microservices**
    - Architecture--Device Services--Virtual Device
    - Architecture--Device Services--Architecture of the SDK
    - Architecture--Device Services--Device Profile
- Getting Started Guide
  - Get EdgeX Foundry - Users
  - Get EdgeX Foundry - Developers
  - EdgeX Foundry SDK that Generates the Device Service
  - Working in a Hybrid Environment

Issue Raised on WG Meeting (11/30/17)

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What documentation does the project need and where do they need it? We have a Wiki today. Others have suggested we need the documentation in GitHub. Do we need both? If we have both how do we keep them synced? How does this impact things like the code and API documentation?

What tool(s)/technology is used to produce the documentation sets?

- reST and Sphinx are proposed.

Migration work – who is doing and what is the timeframe?

- Target first set by end of the year – IOTech have volunteered to complete this work

What do we expect developers/contributors to do going forward? What guidelines and templates for documentation do we need for developers going forward so as to conform to the new standards. Who produces these?

- IOTech volunteered to take action to write up guidelines
- Agreement that documentation needs to live outside the Wiki, living alongside the code – but not a replacement for the Wiki
- Wiki can point at the documentation generated as part of the build process
- Consider reST and Sphinx feeding into a service such as Read the Docs
- Going forward API documentation should be generated as part of build process (e.g. ram2html) and incorporated into the EdgeX documentation set
- Code segments from source files in repository can be automatically incorporated/updated in reST files where needed

Summary

- IOTech are using reStructuredText + Sphinx to create our commercial product documentation

- Will have completed initial markup in reST of selected (shown previously) Edge Wiki pages by end of year

- Happy to donate these files + Sphinx theme (+ build artefacts) to the project as the basis of future EdgeX product documentation if the community agrees

TSC Vote to Approve

- Does the EdgeX TSC approve the documentation structure/go-forward plan, as presented?

AOB / Reminders

Brett Preston

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

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 Philip DesAutels at LF (pdesautels@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

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 by Jim White, Dell (james_white2@dell.com)
  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!!

Hackathon Events

- Dec 1st, regional Startups and Entrepreneurs summit in Cairo.
- Jim White and Tyler Cox putting together hackathon starter kit.
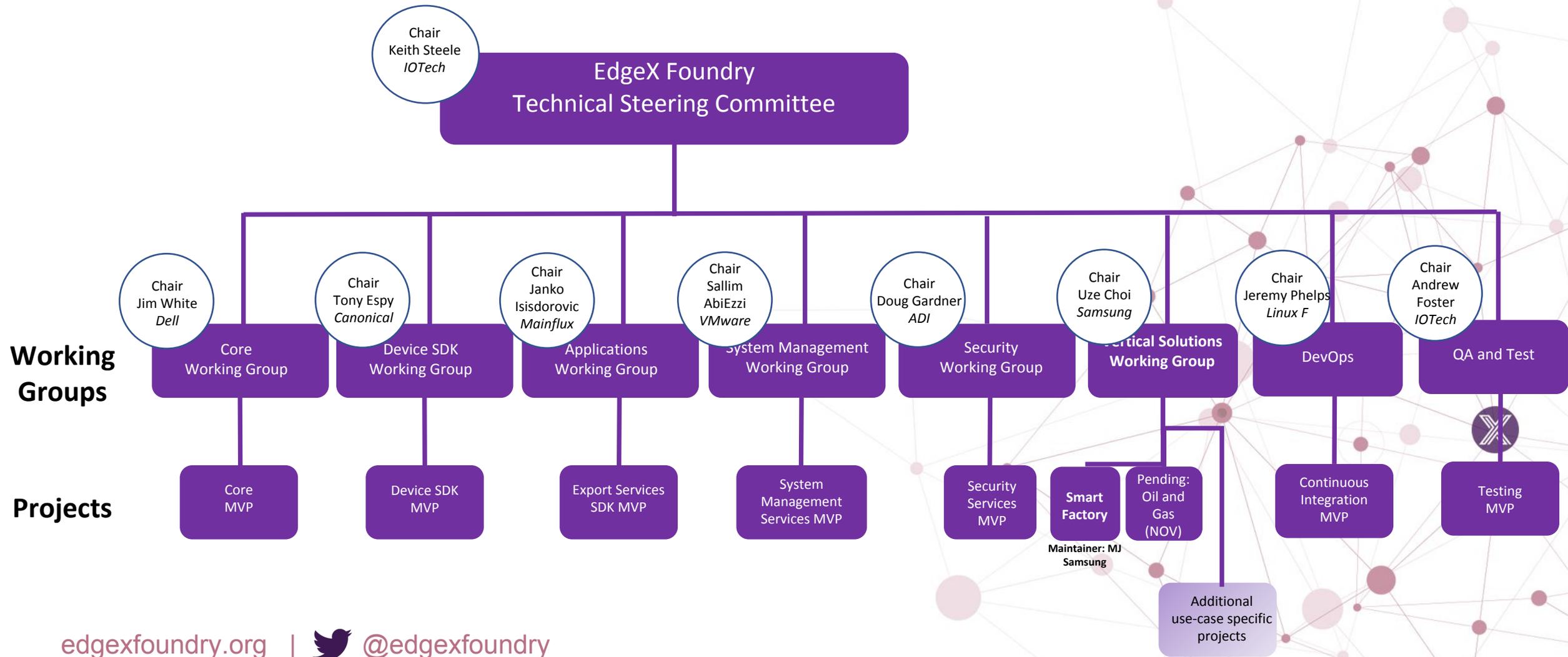- More coming

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

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

EdgeX Project Organization

EDGE X FOUNDRY™

Chair
Keith Steele
IOTech

**EdgeX Foundry
Technical Steering Committee**

Working Groups

Chair Jim White *Dell*	Chair Tony Espy *Canonical*	Chair Janko Isisdorovic *Mainflux*	Chair Sallim AbiEzzi *VMware*	Chair Doug Gardner *ADI*	Chair Uze Choi *Samsung*	Chair Jeremy Phelps *Linux F*	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	Pending: Oil and Gas (NOV)	Continuous Integration MVP	Testing MVP

Maintainer: MJ Samsung

Additional use-case specific projects

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Marketing

- **CTA:** If your company will be demoing technologies that utilize the EdgeX framework, please email events@edgexfoundry.org so that we can add to https://www.edgexfoundry.org/events/

- **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

AOB/Cadence

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

- **Next Meeting: December 13, 2017**

Thank You