



EDGE X FOUNDRY™

Call for EdgeX Dev Kit and VSWG Participation

September 2018

Key project accomplishments since April 2017 launch

- **Bi-annual release roadmap established** and first two release dates met
- Now **almost 70 unique code contributors**, 5X increase from January 2018
- **Refactored entire code base from Java to Go Lang**
 - Full seed platform was ~2.5GB memory, booted in minutes; now ~128MB and boots in ~5 seconds
- Established **security + management plan**, 1st features in July + October releases
- **IIC alliance formed and first IIC test bed in process** from Wanxiang Group
- **Entire documentation base refreshed @ <https://docs.edgexfoundry.org/>**
- Now at 63 project members with **multiple marquee names joining in at SWC**
- **Increasing number of end customer PoCs** in various industries
- Numerous tech providers **integrating into commercial offers**
 - IOTech announced Edge Xpert (Red Hat model) and xRT as a licensed real-time variant

Lots in the works for IoT Solutions World Congress!

Oct 16-18 in Barcelona

- Launch of **Delhi code** (available late Oct – early Nov)
 - 1st manageability features, more security tools, reference GUI and Device Service SDKs in Go and C
- **Launch of EdgeX-based developer kits**
 - Further accelerate adoption and build the foundation for an open IoT marketplace!
- Launch of **additional Vertical Solution Working Groups**
 - Targets: Building Automation and Transportation, open to others
- Debut of **community demonstrator**
 - Initial focus on building automation with more use cases to come
 - Will serve as an evolving foundation for plug-fests and test bed efforts
- **Website and messaging refresh**
- **Several marquee names joining as new project members!**

Big project presence at IoT SWC!

overview



- Debut of **community demonstrator**
- **2 member kiosks**
 - Free to project members (minus T&E)
 - Selected based on best use of EdgeX in their commercial offer

In process: simplified EdgeX website and developer messaging, more use case focus

The wireframe shows a website layout for EdgeX Foundry. At the top is a navigation bar with the logo and links for 'Get Started', 'News', 'Docs', 'Community', and 'About'. Below this is a section titled 'EdgeX Foundry Platform Architecture' with a brief description of the platform as a collection of open source microservices. To the right of the text is a detailed architectural diagram showing layers like 'Export Services', 'Supporting Services', 'Core Services', and 'Device Services'. Below the architecture section is a link 'Take the EdgeX API Walkthrough >>'. The main content area is divided into two columns: 'For Users' and 'For Contributors'. The 'For Users' column contains a paragraph about building custom IoT solutions and a 'Start Using' button. The 'For Contributors' column contains a paragraph about contributing to the open source project and a 'Start Contributing' button.

Example of early site wireframe

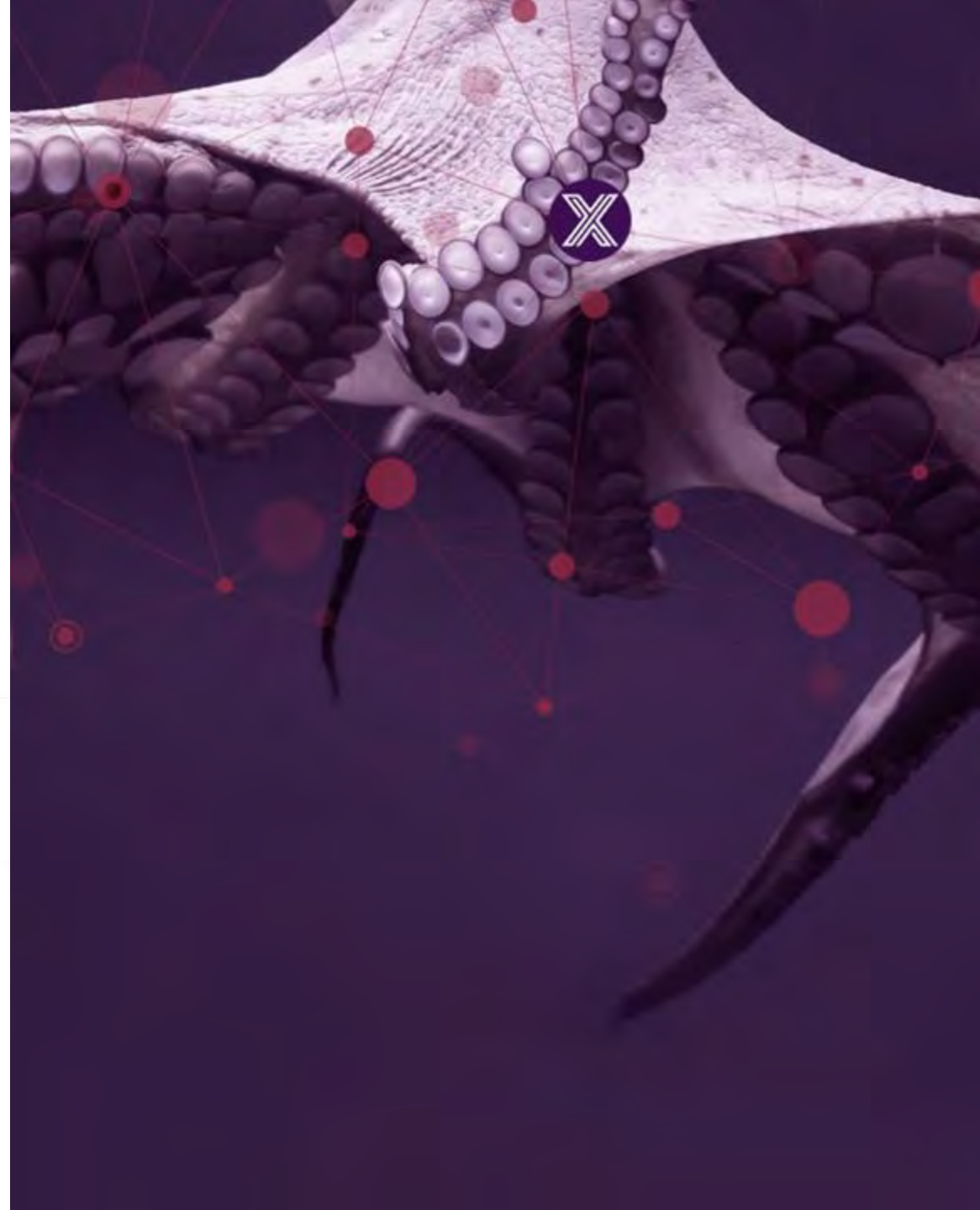
Goal: Simplify EdgeX Foundry website and establish clear onboarding paths for developers who are end users and/or project contributors

Also in plan:

- Dedicated page for getting started with Community Core Dev Kit
- Up-leveling Vertical Solution Work Group overviews from EdgeX Wiki to core web site, including promoting project members who are leading these efforts
 - (e.g. around manufacturing, oil and gas, buildings, transportation, healthcare, etc.)

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EdgeX-based Dev Kits



Vision for EdgeX Dev Kits

Low-cost kits to onboard developers into the open EdgeX ecosystem to maximize their choices as needs evolve

Value to End Users:

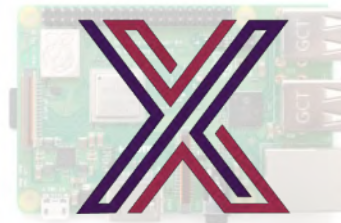
- Innovate rather than reinvent
- Get started developing your solution at a low entry cost while maximizing options from edge to cloud
- Open ecosystem facilitates integration and build / buy / partner decisions
- Confidence that foundation has staying power due to backing from a growing, vendor-neutral community

Examples only: options for launch being finalized and will grow via network effect in EdgeX ecosystem



Choice of Cloud/Applications

Choice of community + commercially-supported EdgeX plug-ins



Choice of Sensors/Devices



Value to IoT Ecosystem Providers:

- Innovate rather than reinvent
- Realize drag from developers earlier in their PoC efforts without having to support myriad custom integrations with your commercial offerings
- Network effect stemming from an open ecosystem with transparent and trusted security and manageability
- Early influence in shaping a marketplace for EdgeX-certified components
- *Additional benefits by ecosystem provider type highlighted on Slide 6*

Options for Community and Commercial Dev Kit variants

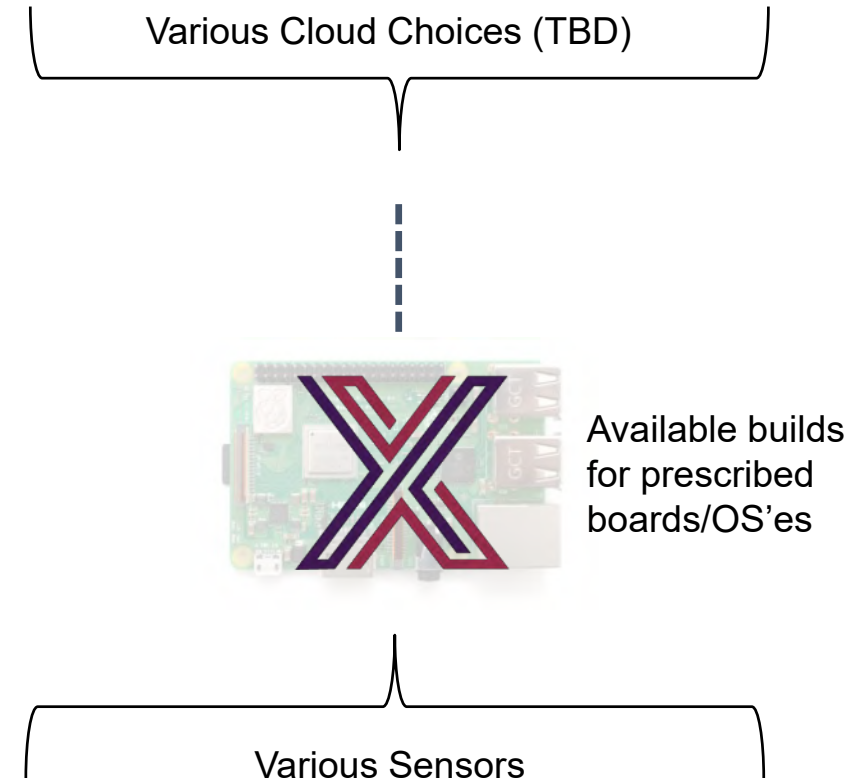
Attribute	Community Core (OSS)	Community Plug-in (OSS)	Commercial Core	OSS/Commercial Platform	Commercial Plug-in
Offer	Builds for common developer-friendly boards available via EdgeX Github	Sample reference microservices (e.g. Device Services, Export/Application Services) contributed by community back to EdgeX project	Commercially-supported version of the baseline EdgeX framework and agnostic to all plug-in value add (example: IOTech Edge Xpert Kit)	Dev kits based on OSS freemium and paid commercial platforms leveraging EdgeX for interoperability (e.g. tied to a particular IoT cloud or platform)	Discrete, commercially-supported (freemium or paid) plug-ins such as Device Services, Cloud Connectors, Edge Analytics, Security Tools, etc.
Target Developer Persona	End user developers or project contributors that are comfortable working with open source code and getting support via community channels		End user developers that want to focus on their own innovations and use-case-specific solutions rather than supporting open source code, while benefitting from being able to plug in value-add from the community		
Fulfillment Model	100% DIY. Developer purchases prescribed HW through preferred online channel (e.g. Mouser, Amazon) and downloads builds from EdgeX Github	Developer purchases supporting HW accessories (e.g. boards, sensors) as needed online and downloads related microservices from EdgeX Github	At discretion of the commercial provider (e.g. direct or via channel, freemium vs. paid from start, etc.)		
Support Model	Via community (e.g. EdgeX documentation and Rocketchat, meetups, hackathons)		At discretion of the commercial provider (e.g. online and/or on-site training and support, support of dev kit only or optional paid contracting services for customization and integration, etc.)		

Call for commercially-supported EdgeX dev kits and value-add plug-ins

Ecosystem Player	Your Supported Offer	Benefit
Sensor/ Device Maker	EdgeX Device Service(s) paired with your sensor/device offering(s)	Write EdgeX device interfaces once and more readily interoperate with any backend application
Gateway OEM	EdgeX builds for your HW and specified Operating System(s)	Qualify EdgeX framework on your HW once and access more developers and solution providers with less customized support
IoT Cloud/ Platform	EdgeX Export Services paired with your IoT Cloud / Platform	Scale faster without having to build everything, write custom drivers for every sensor/device
Pure-play Application Provider	EdgeX application plug-ins (e.g. paid microservices for Analytics, Security, Management, Brownfield Connectivity, etc.)	Ability for developers to quickly realize the value of your offer as part of an end-to-end solution
Telco / WAN Connectivity	Managed services platform or available as plug-in for offers from other kit/platform partners	Attach of your MSP / connectivity offer and related services earlier in the development cycle
System Integrator / Service Provider	EdgeX development, training and/or support services for end users, with emphasis on end-to-end integration and path to production	New revenue stream via developer community and/or ability to more rapidly develop and demonstrate integrated solutions for your own end customers (e.g. as a SI)

WIP: Community Core Dev Kit

- MVP for IoT SWC launch is builds for one board/OS combination, one cloud and one device service for simplicity
 - Likely board choice is the Raspberry Pi 3 due to low cost and large developer base
 - UI: OS, cloud and sensor choice (selection will be based on utility and developer popularity)
 - Growing selection of additional plug-ins will be available through Community and Commercial efforts
- 100% DIY
 - Developer fulfillment through piecing together designated shopping list via online purchases
 - Support entirely through community (e.g. EdgeX documentation and Rocketchat, meetups, hackathons)



Edge Xpert Dev Kit from IOtech

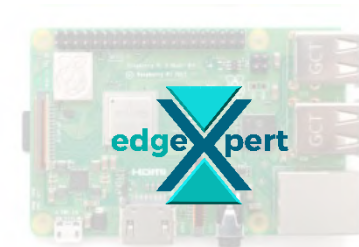
- “Freemium” model with a limited trial period of IOtech’s Edge Xpert plus optional paid support
 - Onboarding help via online and on site training, contracted professional development services
- Open for other partners to make their commercial offers (e.g. sensors, gateways, apps, cloud) available for selection to end users
- UI: packaged up as a kit with GW and sensors through the channel (e.g. Mouser)
- Developer options:
 1. Get started with IOtech’s consulting and then productize on your own
 2. Leverage IOtech’s turnkey services for customization and production support



Example: 1st planned Commercial Core Dev Kit



Several Supported Cloud Choices



Supported Sensors + Ecosystem Adds

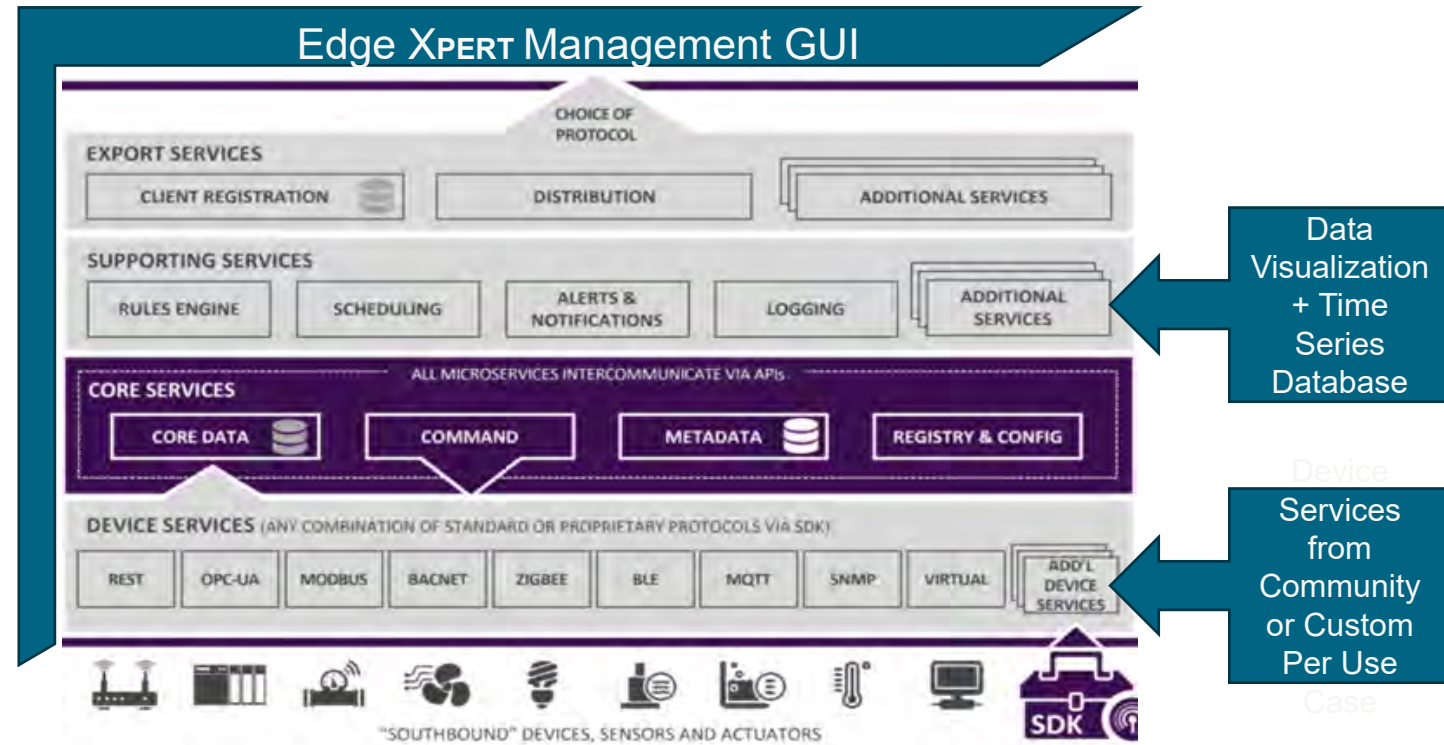
Initially supported sensors TBD

Edge Xpert from IOtech

Reference: Foundation
for IOtech Dev Kit

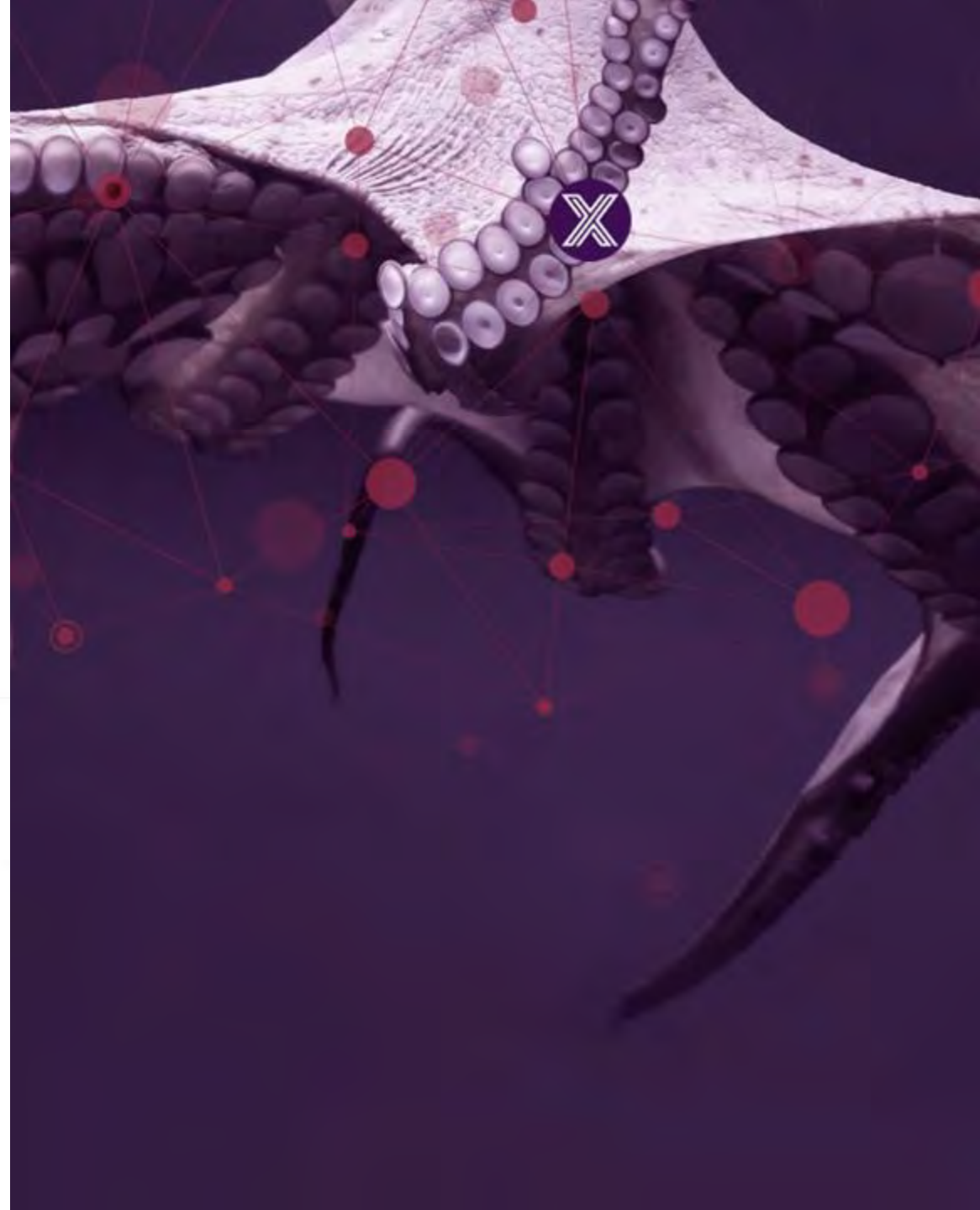
Commercially-supported Features:

- Hardened Device services (e.g. Modbus)
- Extended OT & Cloud connectivity e.g. OPC-UA, AWS IoT Platform
- Simple management GUI
- Commercial packaging and simplified installation
- Full support with guaranteed SLAs
- Product-quality documentation, tutorials and code examples
- Additional OS and hardware support e.g. ARM 32 bit
- Available standard and advanced training



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Additional Vertical Solution Working Groups



Call for additional Vertical Solution Working Groups

- VSWG's serve several important purposes
 1. Develop unique requirements and code contributions for their respective markets
 2. Feed requirements back into the EdgeX core working groups to optimize the core framework for many use cases spanning Industrial to Enterprise to Consumer, including B2B2C crossover like home health, usage-based insurance, smart grid, etc.
- Today we have established just two VSWG's: Smart Factory (led by Samsung) and Oil and Gas (led by NOV) in order to tune process and allow code to mature
- The Delhi release represents an inflection point where it's time to scale the addition of more VSWG domains
- **Calling for anchor sponsors and participants to launch new VSWG's.** Great opportunity to demonstrate thought leadership for your company and lead the way towards building an open ecosystem for your target market(s)!
 - Buildings, Retail, Transportation, Healthcare and Smart Homes are among the most logical next focus areas, others welcome!

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Join in as we further
accelerate the growing
EdgeX community!

