EdgeX Foundry - Stage 3 - 2022-09-21

Completed by: James Butcher, IOTech Systems (EdgeX TSC Chair)

Submitted to TAC Mail List: YYYY/MM/DD

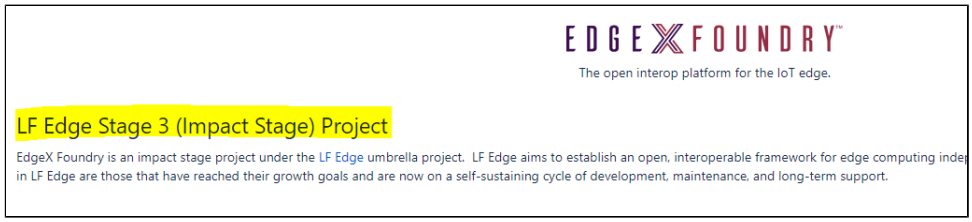
Presented on TAC Weekly Call: YYYY/MM/DD (Meeting Recording)

Below is a self-assessment submitted by TSC Chair/Maintainers of the Project. Comments/questions/feedback is welcome either a) in the Comments at the bottom of the page or b) during the TAC call when information is presented

stage 1: At Large Projects

Stage 2 and Stage 3 Projects also requested to complete this section, as PLD acceptance criteria requires meeting current as well as prior stage requirements

Stage 1 Criteria (from the PLD)	Meets / Needs Improvement / Missing / Not Applicable	Supporting Data (if needed, include links to specific examples)
2 TAC Sponsors, if identified (Sponsors help mentor projects) - See full definition on Project Stages: Definitions and Expectations	Meets	Henry Lau (HP), Joe Pearson (IBM), Trevor Conn (Dell) and Peter Moonki (Samsung)

The typical IP Policy for Projects under the LF Edge Foundation is Apache 2.0 for Code Contributions, Developer Certificate of Origin (DCO) for new inbound contributions, and Creative Commons Attribution 4.0 International License for Documentation. Projects under outside licenses may still submit for consideration, subject to review /approval of the TAC and Board.	Meets	EdgeX is an Apache 2.0 license project. We require all contributions comply with this license agreement as stated in our https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=21823866 EdgeX policy to review new libs, modules, etc. brought into the project to insure anything we use (or is used indirectly by with this license. https://wiki.edgexfoundry.org/display/FA/Vetting+Process+for+3rd+Party+Dependencies We also conduct code scans regularly (with each PR) for any license compliance issues.
Upon acceptance, At Large projects must list their status prominently on website /readme	Meets	Displayed proudly on the EdgeX wiki home page:  https://wiki.edgexfoundry.org/display/FA/EdgeX+Foundry+Project+Wiki Also on our website:  https://www.edgexfoundry.org/

Stage 1 Projects, please skip to **Additional Information Requested from All Projects**

Stage 2: Growth Stage

Stage 3 Projects also requested to complete this section

<table>
<tr><th>Stage 2 Criteria (from the PLD)</th><th>Meets / Needs Improvement / Missing / Not Applicable</th><th>Supporting Data (if needed, include links to specific examples)</th></tr>
<tr><td>Development of a growth plan (to include both roadmap of projected feature sets as well as overall community growth/project maturity), to be done in conjunction with their project mentor (s) at the TAC.</td><td>Meets</td><td>We maintain a roadmap for the next 2 years and have a long term backlog that extends beyond that timeframe. The next couple of releases are documented with pages in our Wiki (and you can see past release roadmaps) here: https://wiki.edgexfoundry.org/display/FA/Roadmap.

Minor fixes and enhancements are also captured in issues with each repository in Github. Github tags are used to label bugs from enhancement requests and when appropriate are associated with a specific target release (e.g., "Levski" tags on the Core Working Group project board here: https://github.com/orgs/edgexfoundry/projects/25 for an example).</td></tr>
<tr><td>Document that it is being used in POCs.</td><td>Meets</td><td>EdgeX is used in countless POCs worldwide so this list is actually more about production uses.
Companies announced use of EdgeX in their products include Accenture (AIP+ product), ThunderSoft (TurboX), Jiangxing Intelligence (EdgeBox), and Tibco (Project Air), HP (Engage Edge), Advantech, UST Global. Many of the company presentations to the EdgeX community can be found at the wiki site below. https://wiki.edgexfoundry.org/display/FA/Vertical+Solutions+Working+Group#VerticalSolutionsWorkingGroup-MeetingMinutes
HP's announcement is found here: https://press.hp.com/us/en/blogs/2020/hp-unveils-hp-engage-edge.html
IOTech Systems also provides a commercial implementation of EdgeX called Edge Xpert and uses that is several POC and customer projects around the globe. https://www.iotechsys.com/our-products/edge-software-platforms/edge-xpert/
Home Edge is using EdgeX in their effort. Roadmap and Release Notes</td></tr>
<tr><td>Demonstrate a substantial ongoing flow of commits and merged contributions.</td><td>Meets</td><td>Collected from LF Insights for the project since inception and for the last 1 year<table><tr><th></th><th>Total</th><th>This Past Year</th></tr><tr><td>Contributors</td><td>616</td><td>197</td></tr><tr><td>Pull requests</td><td>9860</td><td>1690</td></tr><tr><td>Reviewers</td><td>161</td><td>56</td></tr></table></td></tr>
<tr><td>Demonstrate that the current level of community participation is sufficient to meet the goals outlined in the growth plan.</td><td>Meets</td><td>10 successful project releases since April 2017 (2 each year)
EdgeX 2.1 (Jakarta) was our first Long Term Support (LTS) version, released on Nov 17th 2021
EdgeX 2.2 (Kamakura) also released on May 11th, 2022
On track for two more releases in the next year: 2.3 (code named Levski) in fall of 2022, and a likely 3.0 release in the spring of 2023 (code named Minnesota).</td></tr>
<tr><td>Demonstrate evidence of, or a plan for, interoperability, compatibility or extension to other LF Edge Projects. Examples may include demonstrating modularity (ability to swap in components between projects).</td><td>Meets</td><td>Integration with Akraino ELIOT blueprint (tested using UNH lab)
Incubation of Open Horizon project
Inclusion in the Open Retail Reference Architecture (with Open Horizons, and SDO)
Accomplished Baetyl/EdgeX integration (work accomplished in PRC). See Updates of EdgeX-Baetyl collaboration attempts-v0.1.pptx
Collaboration with and use within EdgeX of eKuiper (formerly Kuiper) project
Use of EdgeX in HomeEdge and continued support of that project
Fledge export connector
With regard to convergence with Fledge, both organizations have provided connectors to each other's system (for importing/exporting data) but no further discussions have taken place around additional convergence or interoperability</td></tr>
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Stage 2 Projects, please skip to **Additional Information Requested from All Projects**

Stage 3: Impact Stage

Criteria	Meets / Needs Improvement / Missing / Not Applicable	Supporting Data (if needed, include links to specific examples)
Have a defined governing body of at least 5 or more members (owners and core maintainers), of which no more than 1/3 is affiliated with the same employer. In the case there are 5 governing members, 2 may be from the same employer.	Meets	Our current TSC is comprised of members from Intel, Canonical, IOTech, HP, Eaton, Beechwoods, and VMWare. For names and details see: https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=329436#TechnicalSteeringCommittee(TSC)-Members Each TSC group continues to be a good mix of experienced EdgeX leaders with new members and organizations becoming involved. The TSC this year is also the first to be led by a new chair, with James Butcher replacing Jim White - again indicating the project has intention for a long term future.
Have a documented and publicly accessible description of the project's governance, decision-making, and release processes.	Meets	Matters of project governance, decision making and process are covered in our project Wiki. The following pages outline our policies. Matters of technical decisions and voting process and rules are defined here: https://wiki.edgexfoundry.org/display/FA/Technical+Work+in+the+EdgeX+Foundry+Project Guidance for how to submit code contributions is defined here: https://wiki.edgexfoundry.org/display/FA/Contributor%27s+Guide and here: https://wiki.edgexfoundry.org/display/FA/Contributor%27s+Process Documentation on how our release process and what gets released is here: https://wiki.edgexfoundry.org/display/FA/Release+Process and some additional information on what is considered a release artefact is defined here: https://docs.edgexfoundry.org/1.2/design/adr/devops/0007-Release-Automation/ During 2022, the EdgeX TSC approved a new Use Case Review (UCR) process to better refine the way in which new requirements are defined, before moving to the Architectural Decision Records (ADR) stage of the design.
Have a healthy number of committers from at least two organizations. A committer is defined as someone with the commit bit; i.e., someone who can accept contributions to some or all of the project.	Meets	Work group chairs automatically have committer rights to their work group repositories and nominate others as committers as spelled out in our governance here: https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=21823860#Contributors,Committers&Maintainers-NominationandApprovalofMaintainersandCommitters Each repository has at least 2 committers. The most used repository has 87 committers (https://github.com/edgexfoundry/edgex-go/graphs/contributors)
Demonstrate evidence of interoperability, compatibility or extension to other LF Edge Projects. Examples may include demonstrating modularity (ability to swap in components between projects).	Meets	• Integration with Akraino ELIOT blueprint (tested using UNH lab) • Incubation of Open Horizon project • Inclusion in the Open Retail Reference Architecture (with Open Horizons, and SDO) • Accomplished Baetyl/EdgeX integration (work accomplished in PRC). See Updates of EdgeX-Baetyl collaboration attempts-v0.1.pptx • Collaboration with and incubation of eKuiper project. Incorporation of eKuiper as the default rules engine for EdgeX. • Use of EdgeX in HomeEdge and continued support of that project • Fledge export connector

Adopt the Foundation Code of Conduct.	Meets	For any significant community meeting such as the TSC meetings or meeting where we are inviting outside community to speak or observe are always preceded by the code of conduct and anti-trust policy statements. To date, we have had no unacceptable behavior incidents that the project has been made aware of. EdgeX adheres to, follows and enforces the LF Edge Code of Conduct without addendum today. https://wiki.edgexfoundry.org/display/FA/Code+of+Conduct
Explicitly define a project governance and committer process. This is preferably laid out in a GOVERNANCE.md file and references a CONTRIBUTING.md and OWNERS.md file showing the current and emeritus committers.	Meets	Examples of these documents can be found in our main repository https://github.com/edgexfoundry/edgex-go Additionally, project governance and committer process is fully documented in our Wiki. Existing governance and contributor pages are located on this page and its subpages: https://wiki.edgexfoundry.org/display/FA/Technical+Work+in+the+EdgeX+Foundry+Project And here: https://wiki.edgexfoundry.org/display/FA/Contributor%27s+Guide
Have a public list of project adopters for at least the primary repo (e.g., ADOPTERS.md or logos on the project website).	Meets	Our main repository contains the Adopter document (see https://github.com/edgexfoundry/edgex-go/blob/main/ADOPTERS.md) We also highlight user, adopters and commercial interests of EdgeX on our Website. • https://www.edgexfoundry.org/ecosystem/users/ • https://www.edgexfoundry.org/ecosystem/adopter-series/ • https://www.edgexfoundry.org/ecosystem/members/

Additional Information Requested from All Projects

Additional Information Requested from All Projects	Supporting Data (if needed, include links to specific examples)
Intention for the upcoming year (Remain at current stage OR advance towards the next Stage)	Remain Impact Project
Include a link to your project's LFX Insights page. We will be looking for signs of consistent or increasing contribution activity. Please feel free to add commentary to add color to the numbers and graphs we will see on Insights.	https://insights.lfx.linuxfoundation.org/projects/lfedge%2Fedgex-foundry/dashboard;quicktime=time_filter_3Y
How many maintainers do you have, and which organizations are they from? (Feel free to link to an existing MAINTAINERS file if appropriate.)	https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=21823860 WG Chair are maintainers of their respective repositories with additional rights to nominate others (which often happens). Therefore we have at least 9 maintainers. Most WG Chairs nominate several maintainers to help with the workload of the incoming code reviews. For example, the main service repository has 17 maintainers/committers (see https://github.com/orgs/edgexfoundry/teams/edgex-go-committers/members). A small effort/repository may only have a few maintainers.
What do you know about adoption, and how has this changed since your last review / since you joined the current Stage? If you can list companies that are end users of your project, please do so. (Feel free to link to an existing ADOPTERS file if appropriate.)	We are learning about new adopters all the time. In addition to the companies that are participating in the construction of EdgeX, the following companies have announced (and presented) on EdgeX adoption: • Canonical, IOTech, HP, Thundersoft, Jiangxing Intelligence, Tibco and Accenture Many organizations have adopted, adopting or are considering the adoption of EdgeX and related products including: • Wartsila, Building Systems Integrators (BSIDDC), Schneider Electric, NetEase Technology, Fanmi Technology, Mitsubishi Power Eaton have moved further having now joined the TSC Others who have adopted EdgeX and related products: • Large power supply company, large building automation company, large events and venue management company, etc

How has the project performed against its goals since the last review? (We won't penalize you if your goals changed for good reasons.)	Met or exceeded goals. Over 8.3 million container downloads. Regular releases for 5+ years, including the first Long Term Support (LTS) made this year, indicating the stability of EdgeX to the marketplace.
What are the current goals of the project? For example, are you working on major new features? Or are you concentrating on adoption or documentation?	Working on a minor release targeted for fall 2022 with a likely major release for spring of 2023. Looking to continue to grow the user base with more publicly referenced adopters. Support and integration to computer vision use cases remains a target with new services for ONVIF and USB Cameras released during 2022.
How can LF Edge help you achieve your upcoming goals?	We are looking at moving to GitHub Discussions as a possible replacement for Slack (currently being tested by a single work group - Device Services). Slack has the 10K limit and is not good for historical searches. The community would welcome any feedback or experience from other LF or LF Edge projects Join with other organizations looking to improve dev advocacy through hackathons, badging, and other programs.
Do you think that your project meets the criteria for the next Stage?	We are at stage 3
Please summarize Outreach Activities in which the Project has participated in (e.g. Participation in conferences, seminars, speaking engagements, meetups, etc.)	• Prior to COVID, regular participation at Hannover Messe, IOT SWC, IOT World and LF events. Our members have spoken frequently at live events all over the world. Restrictions mean that virtual events are more commonplace but events appear to be restarting with an aim to visit live events again in 2023 • EdgeX is presenting a sessions at ONES 2022 in Seattle in November 2022 • We brought out a new series of EdgeX Tech Talks during Summer 2022, which attracted a good following. Opportunities remain open for developers or adopters to add to the series • China continue to enjoy excellent EdgeX participation events with 64 proposals received for the China EdgeX Challenge 2022. The Challenge completes throughout October and November 2023. There is an EdgeX Meetup in China planned for Q4 (Nov/Dec) • Continued marketing collateral such as blogs and the EdgeX section of the LF Edge White Paper
Are you leveraging the Technical Project Getting Started Checklist? If yes, please provide link (if publicly available).	This was developed after our project launched, but we already follow all steps.
Please review, and update if needed, your Project entry on the Existing Project Taxonomy page, modifying the Last Updated / Reviewed date in the header.	Updated 9/19/22 by Jim White
Please share a LFX security report for your project in the last 30 days	https://security.lfx.linuxfoundation.org/#/a0941000005osNnAAI/overview