



Review Open Call – F4Fp-06

Call identifier: F4Fp-SME-2

Experiment - DRAFT

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FEC7
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- **Experiment description (max. 4 slides)**
 - Concept and objectives
 - Background and motivation
 - Experiment set-up
- **Project results (max. 3 slides)**
 - Measurements
 - Lessons learned
- **Business impact (min. 4 slides)**
 - Impact on your business, .. how did Fed4FIRE helped you ?
 - Value perceived, .. why did you come to Fed4FIRE ?
- **Feedback (min. 4 slides)**
 - Used resources and tools
 - Added value of Fed4FIRE

DRAFT Concept and Objectives

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Four objectives

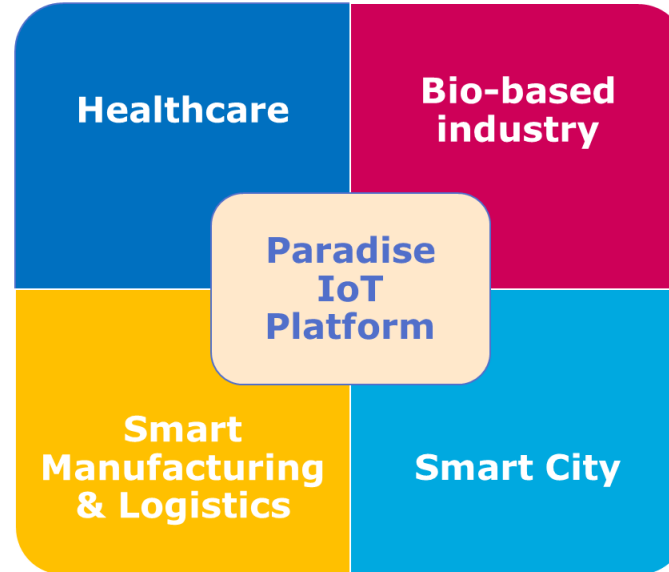
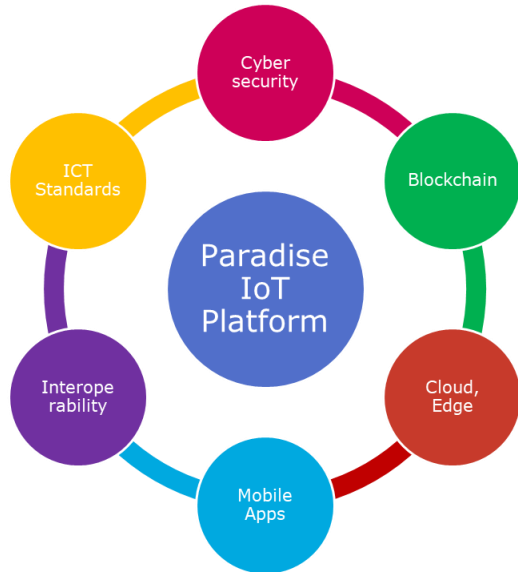
- O1 - develop a holistic framework comprised of cybersecurity risk assessment, security incident and event management, and cybersecurity resilience readiness.
- O2 – develop IoT device trust framework and trust seal.
- O3 – test DRAFT frameworks with Fed4FIRE+ testbeds.
- O4 – dissemination and exploitation of results.

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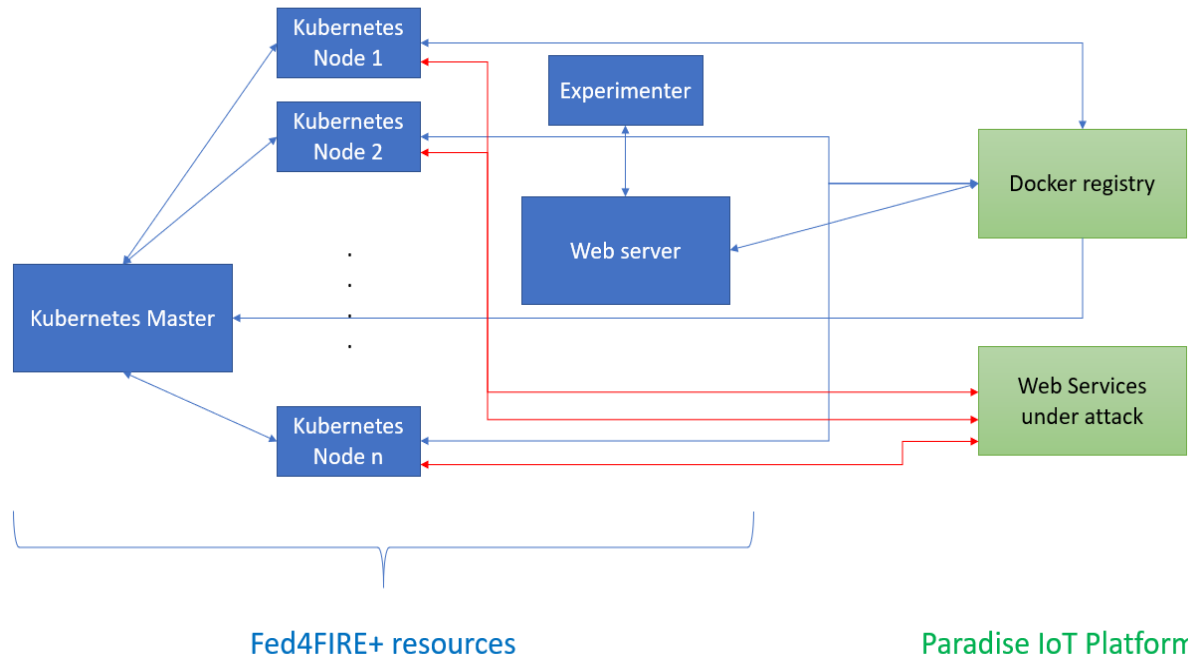
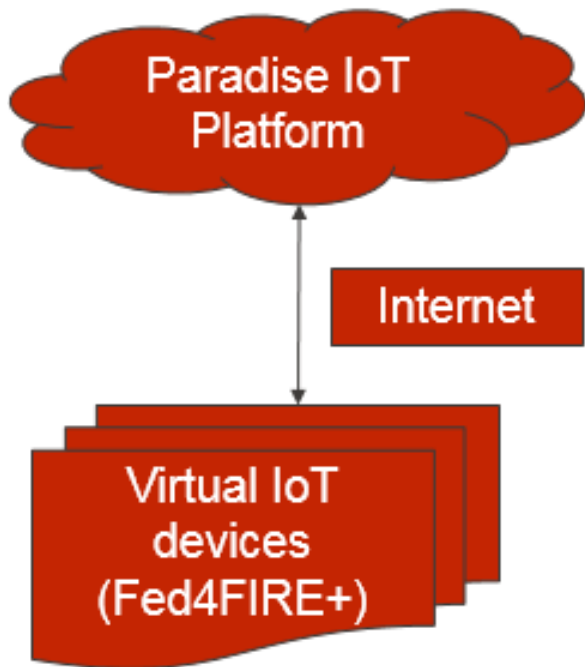


- Sustainable and Secure Digital Transformation using Cloud based, End-to-End Paradise IoT Platform.
- Established in June 2018 in Estonia.



DRAFT Experiment Set-up

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Generic setup

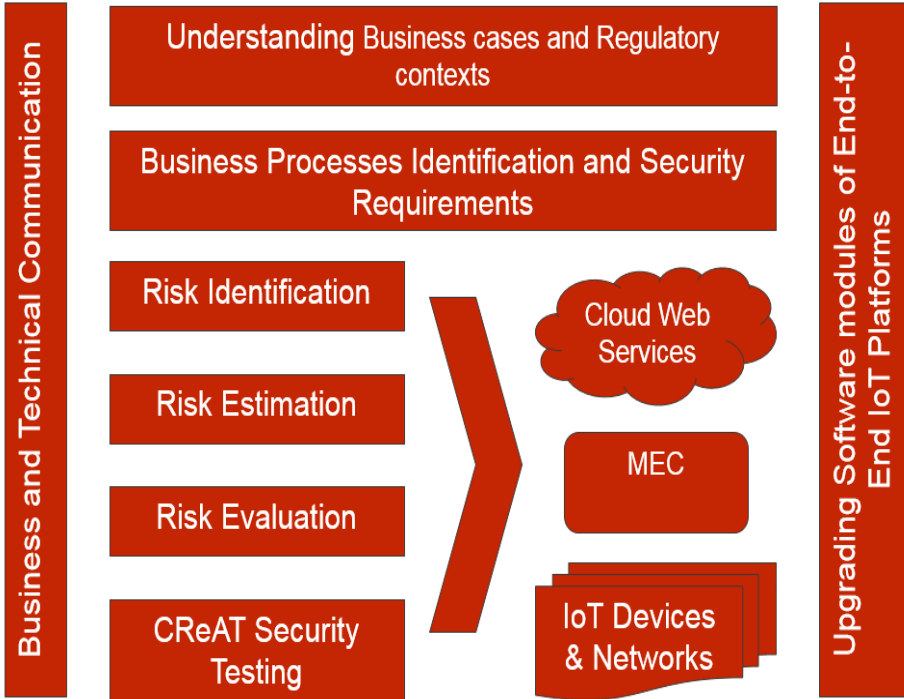
DDoS execution

COVID-19 Risks, Mitigation

| Risk description | Level of impact | Mitigation |
|---|-----------------|---|
| <p>Cooperation with at least five enterprises (AMG) willing to adopt the DRAFT experiment outcomes has been put on hold since SMEs and large enterprises are working with reduced/remote workforce. As a result, forming new cooperation and similar discussions have been put on hold.</p> | Medium | DIGI will take up this aspect once the COVID-19 situation is back to normal. DIGI has already identified more than fifteen SMEs with IoT products selling in the consumer market who will be approached in future to join the AMG for potential take up of the DRAFT exploitable assets. |
| <p>The planned physical workshop with AMG members in end February 2020 was cancelled following similar cancellation like MWC 2020.</p> | Low | The physical workshop was replaced with a virtual workshop but only two AMG members joining. |
| <p>IEEE Webinar on DRAFT outcomes is postponed to April 2020.</p> | Low | This webinar will be organized on 30 April in cooperation with IEEE Consumer Electronics Society Future Directions Committee. Call for participation email will be broadcasted from 7 April 2020. |
| <p>DRAFT demonstration in a European B2B conference was initially planned for Smart IoT Conference London for March 2020. But this demonstration is postponed due to travel restrictions and emergency declaration in Estonia.</p> | Low | DIGI is now targeting IFA 2020 in Berlin (Sept 2020) for DRAFT demonstration. According to the organizers of IFA 2020, the event will still go on as originally planned, as stated in - https://b2b.ifa-berlin.com/en/ExtraPages/COVID-19/ |
| <p>Publishing experiment data to Zenodo repository has been postponed to complete the experiment and reporting.</p> | Low | DIGI will publish the experiment data to Zenodo repository following the Fed4FIRE+ guidelines during Week 15 i.e. 6-10 April 2020. |

DRAFT - Results

CYBERATTACK RISK ASSESSMENT FRAMEWORK



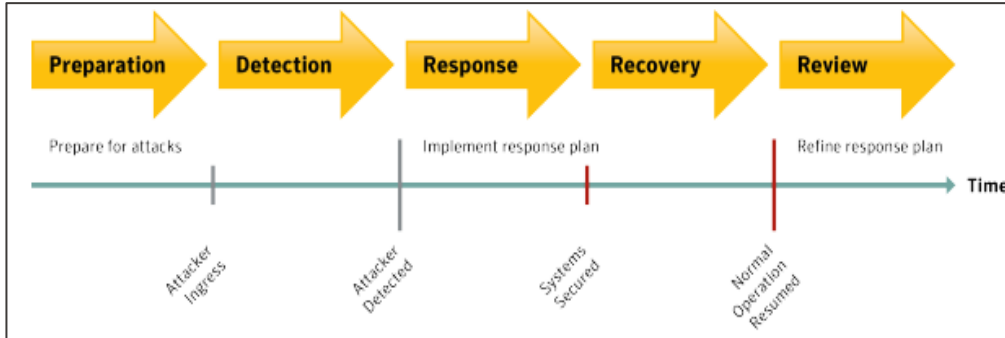
SECURITY INCIDENT AND EVENT MANAGEMENT (SIEM)

SIEM provides dynamic threat analysis, integrated security monitoring, and security management policies

- Data source support
- Data storage and processing capabilities
- Flexibility in security directive
- Risk analysis
- Security event management and visualization capabilities
- Simplicity of deployment to different managed infrastructure and technical support provision

DRAFT - Results

CYBERATTACK RESILIENCE FRAMEWORK



Cyberattack resilience readiness indicator

- Cyberattack risk assessment framework corresponds to preparation i.e. 20% resilient.
- SIEM corresponds to detection and response i.e. 60% resilient.

DRAT - Results

IOT DEVICE TRUST FRAMEWORK

Composed of 15 features divided into 4 categories

- Security principles
- User access and credential
- Privacy and transparency
- Notifications

Note – this list is non-exhaustive and should be treated as a **first version** of the DRAFT experiment's effort on developing the IoT device trust framework.

IOT DEVICE TRUST SEAL

- To obtain the trust seal, an IoT device must comply with all set of features of the framework.
- When under test for the trust seal, if the IoT device is found to be compliant with a subset of the mentioned list, then DRAFT experiment proposes to quantify the trustworthiness as a percentage.
- If the device complies with 10 features out of the 15 listed above, then the trustworthiness is calculated to be 66.67%.

DRAFT – Lessons Learned

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- During testing, known, simulated cyberattacks were launched from the testbed infrastructure to DIGI's Cloud Platform.
 - Insecure default settings, insecure ecosystem interfaces, insecure authentication/authorization, and insecure update mechanism
 - DDoS with ~3000 devices can bring down the web services.
- No breach to the current web services of the Platform detected.
- DIGI will perform additional and more intelligent cyberattacks to test the DRAFT frameworks.

DRAFT – Business Impacts

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EXPLOITATION PLAN

- Integrated DRAFT frameworks into DIGI's Cloud based Paradise IoT Platform for commercialization.
- Collaborate with IoT device manufacturers and suppliers to adopt and implement our proposed DRAFT framework and trust seal.
- Provide consultancy on Cybersecurity to SMEs and large enterprises especially that are non-ICT companies.

JOINT EXPLOITATION WITH EIT DIGITAL

- DIGI is a part of EIT Health Accelerator Programme for 2019 (project ends in 2020).
- DIGI is looking into Digital Industry Focus Area of the EIT Digital Accelerator as a European Tech Scaleup to
 - Secure international customers
 - Raise Series A funding
 - Scale up in North America and Asian cybersecurity markets

DRAFT – Business Impacts

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DISSEMINATION ACTIVITIES

- Workshop with potential customers.
- IEEE Webinar with technical focus.
- One scientific paper.
- Demonstration in a B2B conference.

MARKETING

- 360-degree marketing campaign.
- Identifying all stakeholders and go-to-market strategy.

DRAFT - Business Impacts

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VALUE PERCEIVED

- Upgrading main product – Paradise IoT Platform
- Business development
- Availability of testbed infrastructures

WHY FED4FIRE+

- Support in terms of
 - Federation of testbeds available through single account
 - Grant for successful experiments
 - Technical aspects

DRAFT – Business Impacts

ANTICIPATED BUSINESS GROWTH METRICS

| Year after experiment | Enhanced/ new products/ services | Increase in turnover [K €] | Increase in employment | Improvement in customer satisfaction | New B2B Customers |
|-----------------------|----------------------------------|----------------------------|------------------------|--------------------------------------|-------------------|
| 1 | 3 | 250 | 3 | 30% | 5 |
| 3 | 10 | 600 | 10 | 40% | 20 |

Note – DIGI will start the business development after COVID-19 situation is over and emergencies across European Member States are over.

DRAFT – Business Impacts

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FUTURE PRODUCT ROADMAP

- Paradise 2.0.
 - Freemium business model
- Utilize the cybersecurity know-how in a MaaS mobile app for Tallinn, Tartu.

SUSTAINABILITY PLANS

Long-term sustainability of DRAFT results through

- Commercialization
- R&D projects in upcoming Horizon 2020, Horizon Europe, and similar Cascade Funding projects further advancing our products (e.g. Paradise, AMICA) and services.



PROCEDURE / ADMINISTRATION

- The administration procedures including writing documents, feedback, and performing experimentation in Fed4FIRE+ infrastructure have been apt in terms of the timeframe of the experiment.

EXPERIMENT SETUP

- Very minimal effort required to set up and run the experiment for the first time.
- Documentation in Fed4FIRE+ website are covering all aspects relevant for the experiment.
- Issue – Technical challenges with creating virtual devices, NAT.
 - Solved with testbed documentation.

TESTBED CAPABILITIES

- The Testbed capabilities are sufficient to run the DRAFT experiment.
- Virtual Wall, W-iLab.t are more relevant to this experiment as other Testbed devices only allow «reading» measurements using APIs.
 - We needed to create virtual IoT devices which are essential to POST data to the Paradise IoT Platform.

SUPPORTING SMES

- Such federated testbeds are ideal for early stage companies and SMEs who can validate many prototypes, protocols, security aspects before commercializing a technology.
- DIGI will continue to utilize them for ongoing and future projects.
 - w.iLab.t usage for ORCA Open Call 3 (extended to August 2020 due to COVID-19).



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WWW.FED4FIRE.EU