TELEKOM CHALLENGE

WRAP-UP FIRST EDITION

T LABS

What happened so far & overview of some results

TOPIC IDEATION
July – September

- Topic collection from T-Labs experts, DT stakeholders, academia partners

PREPARATION PHASE
October – December

- Concept development
- Budget allocation
- Scan & contracting implementation partner
- Stakeholder & Jury set-up/ onboarding
- Elaboration of Communication / Marketing strategy (incl. alignment with CorpCom)
- Website & Platform development (incl. alignment with brand management)
- Development of legal documents (incl. alignment with DT legal)
- Set-up of all relevant events (e.g., qualification review & grand jury sessions)

SUBMISSION PHASE
January – April

- Go Live
- Identification & invitation of relevant Universities & Partners
- Start frequently running Marketing Campaigns (PR, bi-weekly Social Media activities, partner websites, etc.)
- Monitoring/Taking care for upcoming questions/requests (internal/external)
- Start with Organization of upcoming events (e.g., review sessions, Impulse talk by C. Nemat)

REVIEW & WORKING PHASE
May – August

- Coordinate first qualification review & grand jury session
- Start Payment process for Top 10 participants
- Set-up of regular consultations and coaching sessions for TOP 10
- Set-up impulse talk session with C. Nemat & Top 10 member
- Proceed with frequently running Marketing Campaigns
- Monitoring/Taking care for upcoming questions/requests (internal/external)
- Start with Organization of winner's selection sessions & award ceremony

WINNERS SELECTION & AWARD CEREMONY
August – September

- Coordinate final qualification review & grand jury session to select winners
- Coordinate & Execute Award Ceremony
- Final Marketing Campaigns (PR, social media)
- Upcoming: Start Payment process for Top 3 participants
- Upcoming: Taking care for follow-ups between TOP 10 and DT BU´s

180 Submissions

35 countries

5 continents

Hub:raum invested € 150.000 in research stream winner

3 patents have been registered by participants from BGU

Follow-ups with TOP 10 & DT units are in alignment / taking already place

Increased T-Labs academia network on (inter)national landscape

T LABS

TELEKOM CHALLENGE

TOP 5 INTRODUCTION

RESEARCH STREAM

1. **A Wireless-Wireline Physically Converged Architecture for In-home Networks**

Experts from a startup called PhyTunes from Palo Alto (United States of America) submitted a research proposal where an approach is described for a converged architecture that reuses the existing wireline infrastructure to carry wireless signals and thereby improve delivery of 5G/Wi-Fi indoors. The converged architecture provides reliable indoor data distribution transparently without needing any changes in the existing Wi-Fi and 5G networks and devices. This research can be widely applied to residential areas replacing expensive and unstable mesh systems and boosters with lower interference and higher security.

2. **Opportunistic 5G Campus-Networks at Home**

A team of researchers from Hochschule Bonn-Rhein-Sieg and Fraunhofer FKIE (Germany) submitted a white paper which focuses on the idea of an architecture to use 5G Campus Networks at home. Since the unlicensed WiFi spectrums are overloaded they propose to use the 5G Campus Network frequencies opportunistically to create macro 5G cells as an alternative for data distribution in home networks. In their architecture, they deal with the components of a new edge device, vertical handovers between Wi-Fi and 5G, traffic steering, primary-user detection, and coordination of small cells. Finally, they consider the benefits for the end user as well as for the network operators by those concepts.

3. **Uninterruptible Smart Home Processes**

A researcher from TU Berlin (Germany) applied with a research paper to solve a demanding challenge. Today's Smart Home protocols specify the functionality and interfaces of smart devices, but they cannot represent arbitrary, complex processes defined by the user. Additionally, if the connection to the Internet breaks down or the involved cloud systems crash, most Smart Home processes will stop working. The research paper builds on the existing protocols and proposes a decentralized approach where the defined process descriptions are directly transferred to the devices. The devices can interpret the processes themselves via a Distributed Process Engine and thus communicate directly with the other devices.

DEVELOPMENT STREAM

1. **Automatic network isolation of smart home IoT devices based on perceptual user security and privacy metrics**

A team of researchers from TU Dresden (Germany) created a software implementation and edge-cloud-architecture to automatically and seamlessly secure smart home IoT networks from internal attacks such as mirai-style malware infections & malicious IoT devices. The software automatically identifies all IoT devices in the network, their corresponding security vulnerabilities and groups them into fully-isolated segments to reduce the attack surface of the network and limit the reach of malicious or infected devices.

2. **Bitteiler: Distributed and collaborative private cloud architecture**

A team of researchers from TU Dresden (Germany) developed a demonstrator which is a sustainable solution that 'clears the air' for even more IoT devices without reducing the information content by seamlessly integrating recent advancements from the research fields of compression and AI. Thanks to Bitteiler's in-network compression and coding, IoT data is made suitable for efficient transmission and storage while it also makes sure that sensitive information is difficult to decipher. Bitteiler can also easily identify malicious packets and detect anomalies.

3. **Edge Cloud @ Home**

A team of experts and researchers from Chocolate Cloud ApS (Denmark), which is associated with Aarhus University, and O&O Software GmbH (Germany) developed a solution for a GDPR-compliant cloud setup for home networks, that places the protection of user privacy as its number one priority.

Users store the data right at home and distribute it between several cloud storage providers, thus not only giving the users more security for their data, but also to give them a choice of where and with whom to store their very personal and private data.

Designed to secure data for storage and backup on site, Edge Cloud @ Home allows users to access their data anytime by its reliance on a set of independent cloud providers and locations selected by the customer.

T CHALLENGE
Starting 15.10.2021

XR IN A HYBRID ENVIRONMENT

Keeping customers close and improving experiences in-store & at home

SOLUTION DEVELOPMENT

- Product Presentation
- Product Sales
- Customer Service
- Employee Training

CONCEPT & DESIGN CREATION

- Customer Experience
- Customer Interaction
- Customer Satisfaction
- Employee Empowerment

XR

- Edge Computing
- AI/ML
- Low Latency
- 5G

Info: https://telekom-challenge.com/

T - CHALLENGE
HOW IT WORKS

Applications can be submitted via https://telekom-challenge.com/ from 15.10. – 31.01.2022

SUBMISSION

15.10.2021 – 31.01.2022

- Developer, designer & researcher from academia, startups and agencies submit their solution proposals based on the given challenge and participation streams.

REVIEW

01.02.2022 – 28.02.2022

- A qualification jury will look for best proposals and select TOP 10 submissions for each participation stream for the next stage.

DEVELOPMENT

01.03.2022 – 01.06.2022

- Selected TOP 10 developers and researchers/designer (individual person or teams) for both streams can now start to work on the proposed minimum viable product or concept & design creation.

PREPARATION

02.06.2022 – 14.06.2022

- Preparation for presentation in front of the Grand Jury.
- Pitch Training

AWARD

15.06.2022

- Following the final solution review in both streams TOP 3 will be rewarded.
- HQ Bonn with Claudia Nemat confirmed