CHARISMA

CHARISMA NEWS

#4 – November 2016

Editorial

Dear Reader,

This is the fourth issue of CHARISMA News, the newsletter of the Horizon 2020 5G-PPP project CHARISMA: **C**onverged **H**eterogeneous **A**dvanced 5G Cloud-**R**AN Architecture for **I**ntelligent and **S**ecure **M**edia **A**ccess.

This edition focuses on the CHARISMA results from the project survey that aimed to identify the factors that are likely to affect CHARISMA adoption rates, and also the project dissemination activities that have taken place in recent months.

I hope you will find the contents of this newsletter interesting. Your comments and suggestions are always appreciated.

Dr. Theodoros Rokkas (INCITES CONSULTING, trokkas at incites.eu), Editor

Project results & activities

Roadmapping survey

The objective of the survey is to provide an assessment of the different factors that we believe will tend to influence the successful adoption of 5G networking within Europe.

To that end, future (e.g. technical, commercial, regulatory, end-user etc.) challenges regarding 5G networks were identified by experts from within the CHARISMA project as part of a Roadmapping

exercise, and a survey was designed in order to estimate the relative importance of these challenges and classify them. The survey was completed by experts from within the CHARISMA consortium; these experts belonging to a variety of different and relevant sectors, including: industry, research institutes and academia from several European countries (France, Germany, Greece, Israel, Luxembourg, Portugal, Slovenia, Spain, United Kingdom), with each expert having a professional background in telecommunications technologies. With regard to the survey itself, the analysis presented here was based upon the Fuzzy Analytic Hierarchy Process (FAHP). The specific criteria-challenges employed in the survey were identified as follows:

- **Performance**: covering aspects related to the performance enhancements as compared to legacy systems (e.g. 3G, 4G etc.);
- **Business**: covering economic and financial factors impacting take-up;
- **Acceptance**: relating to the acceptance by end-users and operators of the new 5G technologies;
- **Flexibility**: relating to the new options that 5G will provide to operators as they deploy the new 5G networks;
- **Technology**: covering the various technological options associated with 5G.

For each of these criteria a set of sub-criteria was also specified, with the analysis methodology

requiring a pairwise comparison between these criteria (and sub-criteria) using an on-line survey of the CHARISMA experts. The relative importance/priority of the crucial factors was identified by calculating their weights as ascertained from the raw data accrued from the on-line survey.

Following the processing of the expert responses the following conclusions can be drawn:

The most important criterion that will affect 5G deployment is considered to be that of *Performance*. It appears that breakthroughs in performance, as stated by the relative 5G-PPP KPIs, will be the main driver behind 5G. This comes as the statement that 5G Performance must be better than that of current legacy systems.

After Performance, the next most important criterion expected to influence a successful 5G deployment, is that of the *Business* aspect. This highlights that apart from performance, economic factors will also strongly influence 5G deployment. Acceptance and Flexibility also closely follow together in importance; whilst Technology is rated as the criterion with the least importance. Taking into account the high priority of performance, it can be deduced that *the performance KPIs therefore need to be reached independently of the underlying technology*.

The full results of this survey are presented in the associated deliverable D5.4 that can be downloaded directly from CHARISMA website.

Dissemination Activities

Social Media
YouTube

CHARISMA has a YouTube channel where latest videos from the project are uploaded. Learn about the CHARISMA project in general and watch the videos highlighting the 3 demonstrators on our channel.

LinkedIn

The project has its own LinkedIn group in order to help disseminate the results and provide networking opportunities for the CHARISMA project. Join our group by following this link.

Facebook

The project has created also a Facebook page where all our latest news is announced. More info can found at the link.

CHARISMA EuCNC 2016 video

During the EuCNC 2016 conference that was held in Athens, our project manager Dr. Eduard Escalona and our technical manager Dr. Michael Parker gave short interviews, presenting key aspects of the CHARISMA project.
The video presents the general research topics that CHARISMA deals with, the achievements made during the first year, the next steps, and the benefits that CHARISMA will bring to society.

Watch the video to learn more about CHARISMA using the following link.

FITCE 2016

The CHARISMA use cases and the project preliminary results were presented at the "Workshop on 5G Technologies and Smart Educational Platforms" held at the FITCE 2016 Congress which took place in Athens from 1-3 September 2016. More details about the workshop can be found in the following link.

Broadband World Forum (BBWF) 2016

CHARISMA presented a demo at the Broadband World Forum (BBWF) 2016 that took place from 18-20 October in London. Ethernity Networks presented a demonstration of the vCPE acceleration being developed in the CHARISMA project.

The demo that was presented at BBWF showed the vCPE NFV's acceleration capabilities of Ethernity's SmartNIC card. Three simple and inexpensive CPE devices work in L2 mode only, with all smart functions such as DHCP Server, NAT, and Parental Control being run at the Server. To present high performance and low latency, all forwarding functions were offloaded onto the SmartNIC.

18th Infocom World conference

Dr. Kostas Filis from COSMOTE gave a presentation in a session organised by the 5G-PPP SESAME project, at the 18th Infocom World conference in Athens titled: "CHARISMA – Low Latency, Enhanced Security and Open Access Support through a Hierarchical, Intelligent, SDN/NFV-based 5G Architecture". More details about this can be found in the following link.
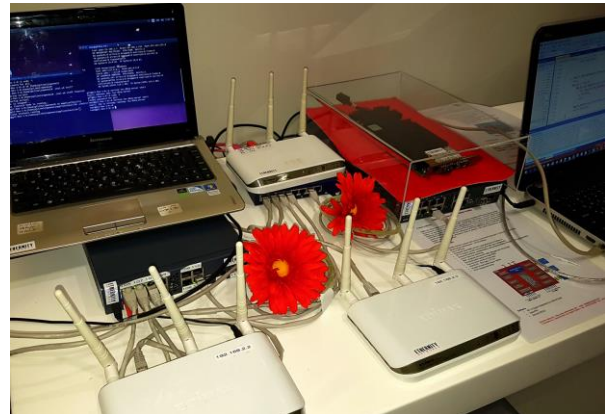

Figure 1: CHARISMA demo at BBWF 2016

2nd Global 5G event

CHARISMA was present at the second Global 5G Event that took place from 9-10 November 2016 in Rome, Italy. The event offered participants both lively debates around the spectrum, standards and deployment of 5G, as well as exciting showcases of the latest technical developments in 5G.

At the CHARISMA exhibition booth visitors had an opportunity to learn about CHARISMA's objectives, and discuss with the project experts.

At the same time visitors had the chance to see three live demonstrations:

- Demo1: Showcase of multi-tenancy operation in an open access 5G network;

Figure 2: Open access demo

- Demo2: Demonstration of an end-to-end security management automation mechanism for 5G networks;
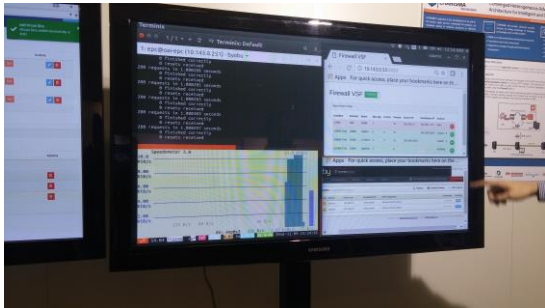

Figure 3:security demo

- Demo3: Development of physical access technologies for low latency video caching applications.

Figure 4: security demo

Figure 5: : CHARISMA team in front of Global 5G Event booth

Outcomes of the 5G Global Event:

The CHARISMA 5G concept is very nicely aligned with the 5G global consensus from around the world (inc. Japan, S Korea, China, USA etc.) when considering to include aspects such as: mobile edge computing (MEC), low latency, and the transportation vertical sector.

CHARISMA exhibited 3 main demonstrations that attracted a lot of attention from other delegates and 5G-PPP project participants.

The 5G Global Event provided an excellent opportunity to understand the motivations, current status, and objectives of the other 5G-PPP projects, and a forum for dialogue and interaction with projects featuring common interests. In particular, we understand better the relative positioning, overlapping and context of CHARISMA with respect to the other 5G-PPP projects.

The presentations in the 2nd 5G Global Event conference forum were also extremely useful to get a heads-up on the current (and future directions) thinking across the world for 5G technologies roll-out, and provided additional incentives & inspirations to continue striving ahead for CHARISMA's ambitious goals

A part of these outcomes were presented in the Newsletter published by the 5G PPP (link)

About CHARISMA

The CHARISMA project is funded by the European Commission (Horizon 2020 program) within the 5G Public-Private Partnership (5G PPP) initiative under the grant agreement No: 671704. The project is set to run for thirty months from 1st July 2015 to 31st December 2017. CHARISMA website