# All-round view on eSim:

operator, vendor and industry expert answer questions on the game-changer technology

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## **All-round view on eSim:** operator, vendor and industry expert answer questions on the game-changer technology

eSIM technology is a true game-changer in the telco industry, which experts believe will become commonplace in the next few years. With new distribution scenarios for consumer and IoT connectivity markets, eSIM leaves CSPs with many questions on how to gain maximum benefits from the technology and adjust their networks and support functions to the eSIM-driven process models.

#### "How We Learned to Stop Worrying and Love the eSIM"

This document is the result of a webinar "How We Learned to Stop Worrying and Love the eSIM", which was held by Nexign (a leading BSS and IoT solutions provider) together with GSMA (an industry organization uniting telecom operators worldwide) and Rostelecom (one of the pioneers of Russia's eSIM market). The recording of the webinar is now available via <u>link</u>. This webinar aroused great interest among representatives of the telecom industry. We are pleased and grateful to all participants of the event who were able to participate in it and for the number of interesting questions that were asked during and after the webinar.

The leading industry experts, Jean-Christophe Tisseuil, Head of eSim Technology at GSMA, Alexey Vedin, Director of Network Monetisation Products at Nexign and Artem Polozenko, Business Development Director at Rostele-com were on hand to answer all these questions. These are now available in a single, easy to read Q&A factsheet.



Jean-Christophe Tisseuil Head of eSIM Technology



Alexey Vedin Director of Network Monetisation Products

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Artem Polozenko Business Development Director



#### Jean-Christophe Tisseuil

Head of eSIM Technology



Jean-Christophe Tisseuil is Head of eSIM Technology at GSMA, leading the Remote SIM Provisioning for Consumer Devices Programme. Previously Jean-Christophe was Vice President Strategy Telecoms at Morpho, e-Documents Division responsible for field marketing, innovation and M2M business development. Before joining Jean-Christophe was key to the launch of Orange France's first Microsoft Windows Mobile smartphone. He was also responsible for Product strategy and marketing for SIM cards at Orange Group. Previously he was Product Training and Merchandising Manager for consumer devices at Ericsson. His exhaustive knowledge of the Telco industry, deep technical skill and strong professionalism has been instrumental in the successful market introductions of new technologies to the telecoms market.

#### What is an eSIM and how does it work? What are the advantages and disadvantages of an eSIM?

eSIM is the digitisation of the SIM distribution where the SIM is either embedded in a device as a discrete chip or integrated inside the device processor (either in the baseband or application processor) and activated over the air by a remote SIM provisioning server.

Beyond advantages and disadvantages, eSIM will enable new connected devices thanks to firstly, the benefit of reducing the plastic SIM real estate and secondly, provisioning the device where and when needed.

#### When will we finally be able to use eSIM on any mobile operator? In other words when will eSIM turn into a widespread technology?

GSMA Intelligence expects that 60% of smartphones global sales will be eSIM in 2025. This gives a good indication that OEMs will endorse the technology in the coming years as the service will be available from many operators around the world. For more information I invite you to read the June 2020 GSMA eSIM report.

# Is the M2M and Consumer eSIM standards unification being analyzed?

Yes, but so far there is no agreement to define a convergence specification.

I'm excited about eSIM technology and the customer opportunities it can provide but if we look for available devices which support eSIM we will see one brand which is strongly prevailing. That's why I can say that eSIM seems to me like an Apple-brand technology today, but for sure I'm not one of their fans. When will the cheaper devices aimed for the mass market probably be available?

Innovation always come from the top but I'm sure that mid-range smartphones supporting eSIM will come to market in the coming months. Now if you look at watches you already will find cheaper devices such as the Oppo or Xiaomi which support eSIM. How do you think we could get eSIM v1, v2, v3 and so on without backward compatibility in the nearest future?

GSMA eSIM specification supports backward compatibility between minor versions. However, for a major version (version 2 vs version 3), it is up to the entities (SM-DP+, Embedded Universal Integrated Circuit Card and Device) to decide, based on the business need, whether they want to support any other version (major version).

# How do you see eSIM adoption over Android handsets?

Positively, Google and Samsung devices are supporting eSIM.

# What will be the key turning point for eSIM to surpass conventional SIM?

It is expected that when 70% of operators will be equipped with a provisioning server, the eSIM market will significantly accelerate. This should happen before 2024 or 2025.

## How can we accelerate eSIM adoption across Africa?

I think education is a key here. eSIM will benefit Africa considering the lack of infrastructure (roads) and security in many countries.

#### What is the progress on "software only" eSIM or iSIM?/ What is the progress on iSIM (basically a secure software eSIM encored in the core processor)?

eSIM does not support soft SIM. iSIM is something else as the SIM function is integrated in the device processor but please note this is not yet supported by the specification.

#### Who is/will be the winner in eSIM business? Apple and Google? Multi-eSIM brokers?

IMHO the consumer will be the winner.

#### Which chip/IC/hardware do I need to use in my design to have eSIM? What are the steps to apply and activate eSIM in my hardware designs?

Any standard form factors applicable to the SIM can be applied to the eSIM apart from the integrated eUICC. The provisioning of the subscriptions (Profile) is agnostic to the form factor to be used.

#### **Artem Polozenko**

**Business Development Director** 

#### Rostelecom

Artem works as Business Development Director at MVNO Rostelecom. He is responsible for the delivery of different MVNO initiatives in collaboration with the host operator team, Rostelecom IT team, vendor members and partners. Artem joined Rostelecom in 2017 and held various roles including Project Manager for PSCore Development and eSIM launch. Prior to Rostelecom, Artem worked 9 years in various network project management roles within MegaFon: he managed technical and commercial projects on core network and also started several MVNO projects in the role of host operator. Artem is an expert on launching a telco operator in the various technical & business fields.

#### Some operators are concerned that eSIM could potentially hurt their businesses. Are these concerns founded?

Not really, as I believe that these concerns are based on a lack of development ambitions. A futureproof operator business can't rely on last decade technologies and should organically embrace emerging trends like eSIM.

## What are the key drivers for eSIM business? eSIM capable smartphones or eSIM as MNO's product.

It's a two-way street. But for MNO it's not just consumer devices that pave the way for eSIM, but also b2b-oriented IoT devices.

#### When I roam abroad and buy a local eSIM, how do I revert back to my home eSIM on return to my home network or do terminals have multiple eSIMs?

Indeed, most terminals are capable of storing multiple eSIM profiles, so you can keep and reuse the foreign subscriptions several times. For instance, iPhones can store 5 or 10 eSIM profiles, but only one can be selected as active.

#### Can you elaborate a little bit around customer touchpoints? This is a critical part of the eSIM experience from the customer perspective.

Right now eSIM is extremely helpful to improve the ways we communicate with clients. We're also working to integrate eSIM provisioning with a biometric platform to organize full online product distribution in the nearest future.

#### How could eSIM be used to capture Inbound Roaming? Could eSIM circumvent the Roaming Architecture?

As we don't have our own RAN, eSIM is a great tool for us to capture a share of the inbound roamer market. We plam to offer temporary eSIM-based subscriptions that foreign operators can offer to those who tend to be "silent roamers". But it's going to be a niche offer until eSIM-capable handsets get at least 50% of the market.

#### **Alexey Vedin**

Director of Network Monetisation Products

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Alexey joined Nexign in 2015 as Director of Implementation Projects for MegaFon, one of Nexign's key customers. In his current role as Director of Network Monetisation Products, Alexey is focused on strategic development and management of the Network Monetisation product suite, which enables creation of new revenue streams and innovative business models for CSPs. With his deep knowledge of the global telecom industry, market trends and telecom operators' requirements, he also supports Nexign's new sales in its target regions. Alexey brings to the company extensive experience within the telecom sector. Before joining the Nexign team, he held senior management positions at MegaFon, where he spent over 15 years. At MegaFon, he was responsible for BSS development and operations, rising from Business Analyst to Head of BSS. Alexey spent a total of more than 20 years in telecommunications, starting his own microelectronics and software development company in 1999 before joining

Sotel/Skylink (NMT/CDMA-450) as a billing system developer. Alexey is a graduate of the Faculty of Economics at SSUE. He received the Ministry of Communications of Russia's highest award, Master of Communications, in 2015.

# Can a device have more than one eSim?

Every device can have one eUICC and multiple eSIM profiles inside this chip.

#### Can you talk through how local number portability works with Remote SIM Provisioning (RSP)?

It works as usual, except for the last step: the user can receive his new International Mobile Subscriber Identity (IMSI) via digital channels, without visiting the operator's office. Number portability gives our subscribers the freedom to retain their call number when changing networks. Thus, each mobile operator can change the Mobile Subscriber Integrated Services Digital Number (MSISDN) for their customers upon request, almost as part of a standard process.

# How complex and costly is the complete ecosystem to support eSIM vs SIM?

It depends on the selected approach: from almost zero if you choose a cloud-based SMDP(+) service to some material but predictable costs if the goal is to build a fully functional own SMDP(+) installation. Anyway, the operator can move forward gradually, increasing functional coverage and improving UX, simultaneously reducing subscriber acquisition cost (SAC) and general logistic expenses.

#### What should be the eSIM strategy in operations like ours (MTN Ghana) in "whipping up" interest and the advantages that come with it?

We suppose that the relevant approach for your company is a step-by-step strategy utilizing a cloud-based service: from contract with existing SMDP vendor for consumer devices like Apple/Samsung to next stage for M2M devices, and further, to wearable companion devices. The best way is to develop this direction with your own SMDP platform, which can be shared for all members of your group of companies to minimize TCO and mitigate any potential commercial and technical risks. What about eSIM for 4G and 5G private networks? Can it be a way to use dynamic resources of public networks during the terminal going in and going out from private to public networks?

Absolutely. We already have such a project with the TMF catalyst program, where we establish marketplace with eSIM subscriptions for 5G PMR (or Private LTE). For more details on Digital World Transformation visit our project informational portal: <u>www.tmforum.org/vertical-industry-telcos-federated-dlt-based-marketplace/</u>

Please kindly share your vision as to what kind of functionality should be covered by the Core Network and any additional parts which may be required.

As we know, there aren't any specific requirements as to the Core Network elements to support eSIM technology. If we talk about an M2M scenario, the operator should have an Over-the-Air (OTA) server to control eSIM profiles remotely. What are the implications for the onboarding process for new subscribers with eSIM? What will change? How are the MNOs preparing?

MNOs should add the following processes: If MNOs are looking for the easiest way to start sales, they need to:

- sign-off an agreement with an existing Simple Multimedia service Description Protocol (+) provider for cloud-based services;
- upload into existing BSS information about eSIM like standard SIM via file interface for initial loading;
- make minimal changes in SIM lifecycle in BSS for activation and MNP processes, it mostly depends on regional requirements;
- provide their subscribers the possibility to receive an activation code and appropriate QR-code;

When MNOs plan to build fully automated E2E digital channels for eSIM with their own SMDP(+) installation, they also need:

- SMDP(+) product from RSP/SMDP vendor;
- Passed certification process for installed solution;
- Integration SMDP(+) with BSS via standard interfaces for dynamic operations;

 Integration with entitlement server for smartwatch and other companion devices activation and orchestration.

How are security concerns addressed regarding the possibility of SIM cloning? If the cloud platform owner decides to commit fraud on its partner and create SIM clones (create eSim or legacy SIM from information that he has obtained) how can it be monitored/prevented, and what consequences can such vendor face if the fraud is discovered?

When we talk about standard SIM management, eSIM does not add new risks to this set of processes. Successfully passed certification means that all data and procedures are fully secure and safe to start operations. In case of any real issues, all possible consequences will be the same as today for all sides – SIM vendor, operator and owner of user equipment. How do you see the integrations needed between MNOs to support swaps between one another in the B2B M2M? There were mentions to the B2B market, but no reference to the M2M standard. The QR is only available for the consumer eSIM, right? In M2M eSIM there are much more complex integrations required.

M2M scenario also has a standard specification from GSMA. The integration scheme is quite different, but key elements are the same. You can find the appropriate specification on the GSMA web site. The possibility to change operator in M2M scenario is technically fully supported, but needs to solve some points in term of business. Now, some market players, including Nexign, are developing an approach how to provide a transparent process of changing the active operator (changing active eSIM profile). It's not a complex solution technically, but it means establishing some formal rules and models for telco players cooperation.

# Does Nexign really have RSP related products?

Nexign has the key core elements from existing partners and is ready to provide fully functional solutions as part of BSS and M2M products.

# **About Nexign**

Nexign, a part of Intellectual Computer Systems Holding (ICS Holding) and a leading Business Support System (BSS) and Internet of Things (IoT) solutions provider, has been delivering pragmatic, value-driven, high-performance product solutions since 1992. As Communications Service Providers become Digital Service Providers, Nexion accelerates their transformation through engineering excellence and agile products and services that facilitate revenue-stream diversification and growth. Nexign takes pride in its partner-centric approach to working with customers. For more than 28 years, the company has delivered on its promise of unlocking value in the short-term while ensuring customers' investments are future-proof and support long-term growth.

Headquartered in St. Petersburg, Nexign employs over 1,800 people in offices throughout Russia, the CIS, the Middle East, Africa, Southeast Asia and LATAM. The company has delivered more than 120 projects across 16 countries and had revenue of \$217 million in 2019, while the revenue from new business, including international projects, increased by 38% reaching \$37 million in 2019. For more information, please visit the <u>website</u> and follow the latest news from Nexign on <u>Twitter</u>, <u>Facebook</u> and <u>LinkedIn</u>

# **Contact us**

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