Minutes of the 1st "Meeting of the Open RAN Promotion Subcommittee"

1. Date and time
   Friday, July 22, 2022, 13:30 - 16:30

2. Location
   Web Conference (Cisco Webex)

3. Attendees (honorific titles omitted, in random order)

Chairpeople:	Akihiro Nakao [The University of Tokyo]
Vice chairpeople:	Four Telecom Operators
	Tatsuya Yanagibashi, Nokia Solutions and Networks Japan G.K. (hereinafter referred to as "Nokia")
	Masanobu Fujioka, Ericsson Japan (hereinafter referred to as "Ericsson")
	Naoto Sato, Fujitsu Limited (hereinafter referred to as "Fujitsu")
Presenters:	Sadayuki Abeta, NTT DOCOMO, Inc. (hereinafter referred to as "DOCOMO")
	Mitsuhiro Kuchitsu, Rakuten Mobile, Inc. (hereinafter referred to as "Rakuten Mobile")
	Tsunehiko Chiba, VIAVI Solutions. (hereinafter referred to as "VIAVI")
Secretariat:	Ministry of Internal Affairs and Communications
Others:	Member companies

4. Handouts and Projected Materials

1-0:	Agenda items
1-1:	Nokia "Openness in Mobile Networks and Nokia's approach"
1-2:	Ericsson "Open RAN and Ericsson Engagement"
1-3:	Fujitsu "Fujitsu's Open RAN Activities"
1-4:	DOCOMO "Open-RAN in DOCOMO"
1-5:	Rakuten Mobile "Background and Status of Open RAN-"
1-6:	VIAVI "O-RAN Alliance Trends and Testing & Integration Process"

5. Meeting Minutes Summary
   5-1   Opening Remarks
   Chairperson Nakao provided remarks:

   It will be an important meeting for all of us to consider the future strategy while ascertaining the situations inside and outside Japan regarding the Open RAN and vRAN promotion activities that Japan should take the lead in. I would like to hear your opinions.

   5-2   Meeting Minutes

After the briefing of the subcommittee, the presentations were provided as follows:

(1) To provide information on Open RAN, Nokia gave a presentation on "Opening Up Mobile Networks and Nokia's Approach" (Projected Materials 1-1).

[Chairperson Nakao, The University of Tokyo]
How does Nokia perceive an unsolvable difference in performance between a single vendor and opening up vendors? How do they perceive the problem as a mobile device vendor in general? How is the recent rise in awareness of Open RAN in Europe?

[Yanagibashi, Nokia]
There is absolutely no reason to deny keeping a close eye on building an open ecosystem after recognizing that there will be a performance gap. While we know that it is better to work with a single vendor in terms of TCO, Nokia would like to make contributions when prioritizing a shift to open ecosystem even at the expense of TCO. However, I don't think it's a good idea to have only one option. While having both of the options available, Nokia needs to be ready to suit its customers' needs. The reasons for promoting O-RAN in each country are due to the idea of maximizing its own interests. It depends on whether the ecosystem that is only used for participating in O-RAN exists locally. Ecosystems may be less likely to exist locally in Europe than in Asia. Also, the idea of technological sovereignty may not be as effective in Europe as it is in Japan and the United States.

[Chairperson Nakao, The University of Tokyo]
We need to determine whether to apply single-vendor or opening up vendors in terms of TCO while taking into account the advantage of single-vendor in terms of compatibility.

(2) To provide information on Open RAN, Ericsson gave a presentation on "Open RAN and Ericsson's Approach" (Projected Materials 1-2).

[Chairperson Nakao, The University of Tokyo]
What do you expect the most from Cloud RAN? What do you think about compatibility with O-RAN challenges?

[Fujioka, Ericsson]
Cloud RAN is expected to optimize RAN through automation and increase efficiency in energy consumption. It is also expected that flexibility allows a variety of functions to be available. This helps achieve something that could not be achieved with the conventional dedicated hardware. We anticipate and expect that the cost of the general-purpose hardware may fall below that of dedicated hardware in the future.

[Abeta, DOCOMO]
Are you considering connecting Ericsson products for SMO and other products developed by third parties? Will we also work on opening up the interface?

[Fujioka, Ericsson]
We are considering implementing third-party SMO on Ericsson's cloud RAN. To achieve it, we are also working on opening up the interface.

[Abeta, DOCOMO]
Are you working on opening up A1 and O2 interfaces, X2, Xn and fronthaul interfaces?

[Fujioka, Ericsson]

As for the fronthaul, we contribute to standardization and propose improvement measures. On the other hand, from the perspective of overall RAN optimization, there are some areas where the current O-RAN interface is not necessarily good, so we would like to address those areas carefully.

[Miyata, Sumitomo Electric]
Are members in nGRG (The next Generation Research Group) and schedules publicly available?

[Fujioka, Ericsson]
The information is publicly available. However, nGRG is just getting started, and we will discuss specific road maps going forward. I hope you will look forward to it.

[Chairperson Nakao, The University of Tokyo]
I received a response from Chiba-san of VIAVI via chat that it is "publicly available."

(3) In order to provide information on Open RAN, Fujitsu gave a presentation on "Fujitsu's Approach to Open RAN" (Projected Materials 1-3).

[Chairperson Nakao, The University of Tokyo]
Is it RIC and security that North America is focusing on? Does the U.S. have different approaches to O-RAN from Japan?

[Sato, Fujitsu]
Cloud-native advanced carriers in North America are focusing on promoting the services for enterprises rather than the public. There is great interest in flexible deployment of resources. I had an impression that they are innovatively building a system to submit a new file by using a testbed. (I have an impression that there is a good environment for implementing new technologies.) Going forward in terms of security, it is required to properly work on the entire network, including O-RAN. I think that everyone is aligned and working on it.

[Chairperson Nakao, The University of Tokyo]
Since Fujitsu is focusing on North America, I would like to hear more about trends in that region.

[Watanabe, KDDI]
Reducing power consumption and being environmentally friendly are important topics. What are your opinions about the feasibility of low power consumption in a multi-vendor environment? Also, what challenges have you already found that need to be solved?

[Sato, Fujitsu]
When we think in terms of use cases, we want to actively provide feedback on the features required for low power consumption for the O-RAN interface ahead of standardization. We believe there are still technical problems to be addressed in order to optimize overall network power consumption, such as fronthaul flexibility and the dynamic resource allocation to manipulate cells to the ON or OFF state. We would like to hone our skills as we implement it.

(4) In order to provide information on Open RAN, DOCOMO gave a presentation on "Open-RAN in DOCOMO" (Projected Materials 1-4).

[Fujioka, Ericsson]

Are you considering truly free combinations of vRAN vendors?

[Abeta, DOCOMO]
We are considering free combinations. Page 10 of the handout states the initial combinations. We plan to test various combinations going forward. However, keeping in mind the relationship between time and cost, the combination options to be tested will be discussed based on the trends in the world and discussions with European operators.

[Kuchitsu, Rakuten Mobile]
Depending on what situations, should we choose either Shared Open Lab or OTIC?

[Abeta, DOCOMO]
In OTIC, we will focus on interconnection tests. In Shared Open Lab, we will conduct end-to-end performance tests, including traffic and applications. Therefore, two of them are at different testing stages.

[Chairperson Nakao, The University of Tokyo]
I think it is an extremely good environment that operators around the world can remotely connect with Shared Open Lab. Are you expecting tests between operators, not vendors?

[Abeta, DOCOMO]
We expect tests between operators. Not only end-to-end performance but also integration can be checked. Settings, including configurations, can be changed. Different RUs can be remotely selected, and end-to-end testing can be performed. With a load testing machine connected, tests in high traffic environments can be conducted.

[Chairperson Nakao, The University of Tokyo]
I hope we can share our experiences globally. I feel that the ability to check RU performance remotely is an advantage of Open RAN. Is that what we aim for?

[Abeta, DOCOMO]
You're right. Since RU is placed inside the shield box, it can be remotely shared with other countries. We are building Shared Open Lab, while taking into account scaling.

(5) In order to provide information on Open RAN, Rakuten Mobile gave a presentation on "Open RAN Situation So Far" (Projected Materials 1-5).

[Kato, ARIB]
Would you explain the relationship between 3GPP and O-RAN Alliance standardization?

[Kuchitsu, Rakuten Mobile]
Use 3GPP for CU/DU and backhaul and O-RAN Alliance for fronthaul and RIC.

[Chairperson Nakao, The University of Tokyo]
Is the understanding correct that the interface specified by 3GPP is compatible with that in O-RAN Alliance and fronthaul is uniquely specified by O-RAN?

[Kuchitsu, Rakuten Mobile]
As IEEE standards are cited, fronthaul is not uniquely specified by O-RAN Alliance. I have an impression that what is specified by O-RAN Alliance indicates which standardization technologies of other organizations are being referred to.

[Chairperson Nakao, The University of Tokyo]

Japan is ahead of the rest of the world in O-RAN. Rakuten is ahead in the use of vRAN. I had an impression that it is better to organize when to use the existing standardizing organizations instead.

(6)   In order to provide information on Open RAN, VIAVI gave a presentation on "O-RAN Alliance Trends and Testing & Integration Process" (Projected Materials 1-6).

[Chairperson Nakao, The University of Tokyo]
Regarding Japan OTIC, should CU/DU interoperation tests be conducted remotely?

[Chiba, VIAVI]
We should be able to conduct interoperation tests remotely. In order to do that, VIAVI needs to come up with a system to conduct tests in cloud environments through remote connections.

[Kuchitsu, Rakuten Mobile]
Japan OTIC already supports tests through remote access, and operators outside Japan can also conduct tests remotely if they send RU to OTIC. VIAVI measuring instrument is also included.

(7)   The secretariat took applications from speakers on the following topics for future meeting.
   A)   Schedule of next meeting
      ①   Around late August
      ②   Discussions will begin ahead of creating a report from around the end of the year and then aiming to complete the report by the end of the fiscal year.
   B)   Presentation topics
      ①   Latest Open RAN status
      ②   Advantages of Open RAN
      ③   Problems of Open RAN
      ④   Test bed for interconnection tests
      ⑤   New technologies of Open RAN
   C)   Contact information for presentations: b5g_consortium@soumu.go.jp

5-3 Closing Remarks
The meeting was closed with comments and closing remarks from chairperson Nakao.

His comments are as follows:

Today, we were able to hear about each company's efforts and enthusiasm. These are important trends as case studies in Japan. We hope to continue sharing information. This subcommittee is positioned under the Beyond 5G Promotion Consortium, and is a joint subcommittee of the Planning and Strategy Committee of Chairperson Morikawa of the University of Tokyo and the International Committee (of Chairperson Nakao of the University of Tokyo). Therefore, we will keep a close eye on the global trends involving Open RAN. Looking ahead to Beyond 5G, there is a high expectation especially for RIC as a sector in AI and machine learning activities and automation. We will also consider what to do with the next generation of Open RAN toward Beyond 5G.

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