

**OSS Interoperability Initiative**  
**Memorandum of Understanding**  
**May 14<sup>th</sup>, 2016**

The following OSS Interoperability Initiative Memorandum of Understanding ("MoU") has been entered into by and between

**Ericsson AB**, a corporation incorporated under the laws of Sweden and having its registered office at Torshamnsgatan 23 S-164 80 Stockholm, Sweden, and

**Huawei Technologies Co. Ltd**, a corporation incorporated under the laws of People's Republic of China and having its registered office at Bantian, Longgang, Shenzhen 518129, People's Republic of China,

**Nokia Solutions and Networks Oy**, a corporation incorporated under the laws of Finland and having its registered office at Karaportti 3, 02610 Espoo, Finland,

hereinafter referred to as "**Party**" or "**Parties**" respectively.

WHEREAS:

- A. Each Party is active in the development and sale of "OSS" operations support systems, on the worldwide market.
- B. The Parties' objectives with this OSS Interoperability Initiative is among other things, to promote competition by:
  - enabling interoperability between their respective and third party vendors' OSS,
  - reduce overall OSS integration costs,
  - enable shorter time-to-market,
  - enable utilization of network infrastructure and OSS vendors' innovations outside definitions by standards,
  - committing to offer one another to enter into bilateral cross license agreements, for all the OSS Interfaces as set forth in this MoU,
  - all of which will be beneficial to customers and consumers cost/price wise.
- C. The Parties' general guiding principles for the OSS Interoperability Initiative are openness, fairness, reasonableness and non-discriminatory treatment.

NOW THEREFORE, in consideration of the above the Parties agree and commit to the following:

1. **DEFINITIONS**

The following expressions shall have the meaning hereby assigned to them unless the context would obviously require otherwise.

**“Interoperability Test Specifications”** shall mean the proprietary vendor specific interoperability acceptance test and interoperability acceptance criteria documentation, related to the applicable OSS Interface, currently used by the relevant Party and/or third party as applicable including any new updates/upgrades thereof and one earlier release thereof.

**“FRAND”** shall mean fair, reasonable and non-discriminatory.

**“Interoperability Testing Services”** shall mean services providing access to an OSS Interface functionality test facility used by the relevant offering Party to evaluate the level of interoperability of functionality developed based on licensed OSS Interfaces.

**“OSS Interface(s)”** shall mean any one of the following OSS north bound documented proprietary interfaces: **RAN/CN CM Interface, RAN/CN Event/traces Interface, RAN/CN/IMS FM Interface, RAN/CN/IMS PM Interface, MANO Interface** of the relevant Party currently used and implemented in such party's offered relevant OSS or part thereof, including any new updates/upgrades thereof and one earlier release thereof.

**“OSSii Portal”** shall mean the OSSii portal to be established and operated by the Parties as a result of this MoU, further described in Article 5 below.

**“OSS”** and **“OSS system”** shall both independently mean operations support system, which is a system aimed at managing, monitoring and provisioning telecom network equipment and services, and which directly connects to telecom network equipment.

**“RAN/CN CM Interface”** shall mean the radio access (GRAN (GSM), UTRAN (WCDMA) and E-UTRAN (LTE)) and core (Circuit/Packet Core and Evolved Packet Core) network interfaces for configuration data discovery and change management.

**“RAN/CN Event/traces Interface”** shall mean the radio access (GRAN (GSM), UTRAN (WCDMA) and E-UTRAN (LTE)) and core (Circuit/Packet Core and Evolved Packet Core) network interfaces, provided on a basic set of network events/traces.

**“RAN/CN/IMS FM Interface”** shall mean the radio access (GRAN (GSM), UTRAN (WCDMA) and E-UTRAN (LTE)) and core (Circuit/Packet Core and Evolved Packet Core) and IMS (IP-Multimedia Subsystem) network interfaces for alarm management.

**“RAN/CN/IMS PM Interface”** shall mean the radio access (GRAN (GSM), UTRAN (WCDMA) and E-UTRAN (LTE)) and core (Circuit/Packet Core and Evolved Packet Core) and IMS (IP-Multimedia Subsystem) network interfaces for performance counter data management.

**“MANO Interface”** shall mean the interfaces between VNF and NFVO.

“**MANO**” shall mean Management and Orchestration

“**VNFM**” shall mean Virtual Network Function Manager

“**NFVO**” shall mean Network Function Virtualization Orchestrator

“**NEP**” shall mean Network Equipment Provider, which sells telecom network equipment and services.

## 2. THE OSSII PRINCIPLES

- 2.1. The Parties commit to offer one another on FRAND terms and conditions license agreements, for all the OSS Interfaces and Interoperability Test Specifications, providing the rights to develop, manufacture and sell worldwide, to such applicable interfaces relevant functionality..

Further, each Party commits to do the same, bilaterally, with any NEP having all OSS Interfaces and Interoperability Test Specifications, provided that the NEP commits to the same undertakings stipulated in Article 2.1, 2.2 and 2.3, and makes such commitments public through a press release and on the OSSii Portal.

- 2.2. In the event a third party does not have any proprietary OSS Interface(s) and Interoperability Test Specifications of its own to barter with, then such third party may request from the Parties individually and the Parties shall be obligated individually to offer on FRAND terms and conditions a license to their respective proprietary OSS Interface(s) and Interoperability Test Specifications for the purpose of developing, manufacturing and selling worldwide, to such applicable interface relevant functionality.
- 2.3. Each Party commits to offer one another and third parties, having signed an OSS Interfaces and Interoperability Test Specifications license agreement, on FRAND terms and conditions Interoperability Testing Services.

## 3. WARRANTY AND LIMITATION OF LIABILITY DISCLAIMER

- 3.1. No warranties for a particular purpose of any kind are provided in conjunction with the undertakings stipulated in this MoU.
- 3.2. NO PARTY SHALL BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, NOR FOR LOSS OF REVENUE, BUSINESS, DATA OR INTEREST, FOR BREACH OF IT OBLIGATIONS ACCORDING TO THIS MOU UNDER ANY LEGAL CAUSE WHATSOEVER AND ON ACCOUNT OF WHATSOEVER REASON, EXCEPT WHERE SUCH LIABILITY IS MANDATORY BY APPLICABLE LAW.

**4. PRESS RELEASE**

- 4.1. The Parties have agreed on publishing a common OSSii MoU related press release describing the prolongation of OSSii, including a brief description of the initiative and each Party's who to contact list for OSSii related matters. The press release shall be published promptly after entering into of this MoU by each Party.

**5. OSSII PORTAL**

The Parties will establish and operate the OSSii Portal during the term of the MoU. The OSSii Portal will include:

- this MoU
- OSSii press release
- questions and answers
- a list of contact person(s) for all the parties having accepted the OSSii principles, logos, contact names with e-mail and mail addresses and phone numbers
- informing of all bi-lateral agreements that have been entered into

The costs of running the portal will be shared equally between the Parties, and all changes to the OSSii Portal are subject to prior written approval by all Parties.

**6. TERM**

- 6.1. This MoU shall become effective on the date it has been signed by all Parties and remain in effect for a term of three years, after which it will automatically terminate.
- 6.2. Sections 3 and 8 shall survive termination of this MoU.

**7. MISCELLANEOUS**

- 7.1. Nothing in this MoU shall be of a confidential nature.
- 7.2. Each Party alone is responsible for its system's functionality interoperability and compatibility wise.
- 7.3. To avoid any doubt this MoU does not in any way transfer ownership rights or license rights to any intellectual property rights whatsoever.
- 7.4. This MoU including this clause may not be, discharged, abandoned, changed or modified in any manner, except by an instrument in writing duly signed by the Parties.
- 7.5. This MoU shall relate solely to the OSSii and shall not extend to other activities or create a partnership or any other form of legal person between the Parties.



- 7.6. No Party shall have the right to assign or transfer this MoU or any of its rights or duties under it without the prior written consent of all Parties.
- 7.7. The Parties agree to comply fully with the respective applicable laws and regulations including, but not limited to, tax, competition/antitrust and export control laws and regulations.
- 7.8. All notices or other communications required or permitted hereunder with regard to the interpretation, validity etc. of the Agreement shall be in writing and shall be given by certified mail addressed to all Parties' contact persons as defined in OSSii Portal.

## 8. GOVERNING LAW AND DISPUTE RESOLUTION

- 8.1. This MoU shall be governed by the law of the Canton of Zürich, Switzerland, without reference to its principles of conflict of laws.
- 8.2. Any differences or disputes arising out of or in connection with this MoU shall be settled by an amicable effort on the part of the Parties. An attempt to arrive at a settlement shall be deemed to have failed as soon as one Party so notifies the other Parties in writing.
- 8.3. If an attempt at settlement has failed, the dispute shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by three arbitrators. The place of arbitration shall be Zürich, Switzerland. The language to be used in the arbitration proceeding shall be English. The arbitral award shall be substantiated in writing. The arbitral tribunal shall decide on the matter of costs of the arbitration.

## 9. COPIES OF AGREEMENT


- 9.1. This Agreement has been duly signed by the Parties in three originals and the Parties have taken one each.

[Signatures on the next pages]



Place and date: Stockholm 2/5 - 2016  
Ericsson AB

  
..... (signature)  
**Anders Lindblad**  
Senior Vice President  
..... (name)  
**Head of Business Unit Cloud and IP**  
..... (position)

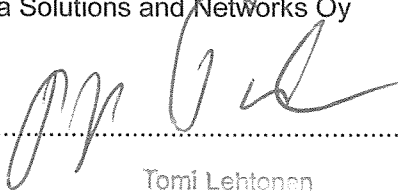
  
..... (signature)  
..... (name)  
..... (position)  
**Anita Dressel**  
Vice President, Business Control  
Ericsson AB  
Business Unit Cloud and IP

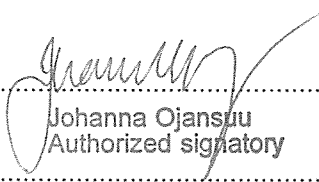
Place and date: Shanghai 12/6 - 2016  
Huawei Technologies Co. Ltd

Linguixia (signature)  
president of SingleOSS, Wireless. (name)  
(position)

..... (signature)  
..... (name)  
..... (position)

Place and date: Essex 2 June 2018  
Nokia Solutions and Networks Oy

  
..... (signature)  
..... (name)  
Tomi Lehtonen  
Authorized Signatory  
..... (position)

  
..... (signature)  
..... (name)  
Johanna Ojansuu  
Authorized signatory  
..... (position)