



# Project SPOTLIGHT



## Course 2: “Standardization and patentability”

### Seminar 5, part 2: “SDN and multi-tenancy in mobile networks”

Stockholm May 14-17, 2019

Location: Ericsson offices,  
Torshamnsgatan 23, Stockholm, Sweden

Conference Room: Conf SE KI 21 01 307 (25) Sven-Ture

1<sup>st</sup> Day – May 14, 2019 – Standards and patentability

Time	Speaker	Tentative Title	Syllabus
09.00-10.30	Kim Laraqui, Tomas Andreasson, Ericsson	Patentability	<ul style="list-style-type: none"><li>• Patentability in general</li><li>• Ericsson innovation and Standard Essential Patents (SEPs) - Fair, Reasonable and Non-Discriminatory</li><li>• Case study of a typical Ericsson SEP</li></ul>
10.30-11.00	Coffee Break		
11.00-12.30	Jari Arkko, Ericsson	IETF	<ul style="list-style-type: none"><li>• How does Internet technology get developed?</li><li>• Internet technology standards, what is the IETF and how can one participate in its work?</li><li>• Trends and hot topics in Internet technology evolution<ul style="list-style-type: none"><li>○ growing use of encryption</li><li>○ new transport protocols, such as QUIC</li></ul></li><li>• How IETF deals with copyright and IPR topics</li></ul>
12.30-13:30	Lunch Break		
13.30-15.00	Sverker Magnusson, Ericsson	Spectrum standardization	<ul style="list-style-type: none"><li>• Spectrum: what is it good for, what are the issues?</li><li>• Spectrum availability: the decision process (PTS, CEPT, ITU-R etc)</li><li>• Current hot topics: 5G, WiFi, verticals</li></ul>
15.00-15.30	Coffee Break		
15.30-17.00	Gunnar Nilsson & Magnus Buhrgard, Ericsson	Management & orchestration	<ul style="list-style-type: none"><li>• Open source</li><li>• Management &amp; Orchestration</li><li>• ONAP</li></ul>



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## 2<sup>nd</sup> Day – May 15, 2019 – Standards and patentability

Time	Speaker	Tentative Title	Syllabus
09.00-10.30	Janne Peisa, Ericsson	Overview of 3GPP and related standards	<ul style="list-style-type: none"> <li>Why standardize?</li> <li>Overview of 3GPP</li> <li>3GPP ways of working</li> </ul>
10.30-11.00	<b>Coffee Break</b>		
11.00-12.30	Gunnar Mildh, Ericsson	3GPP RAN	<ul style="list-style-type: none"> <li>Overview of the 3GPP RAN architecture and protocol stacks</li> <li>Key functionality, incl. connection handling, mobility, states, user plane, new 5G NR features</li> </ul>
12.30-13:30	<b>Lunch Break</b>		
13.30-15.00	Göran Rune, Ericsson	3GPP core	<p>The Core Network Demystified</p> <ul style="list-style-type: none"> <li>LTE/EPC Architecture</li> <li>What does the nodes do?</li> <li>From basic architecture to support of additional features</li> <li>How far into a CN does a handover reach?</li> <li>5GC, SBA concept and Network Functions (NFs)</li> </ul>
15.00-15.30	<b>Coffee Break</b>		
15.30-17.00	Peter Öhlén, Ericsson	Patent exercise	<ul style="list-style-type: none"> <li>Group discuss/work on preparation exercise</li> <li>Presentation to everybody</li> </ul>

## 3<sup>rd</sup> Day – May 16, 2019 – SDN and Multi-tenancy in mobile networks

Time	Speaker	Tentative Title	Syllabus
09.00-10.30	Zarrar Yousaf, NEC	Towards Autonomous MANO for Multi-tenant 5G infrastructures (1)	<ul style="list-style-type: none"> <li>5G networks – Overview and Challenges</li> <li>Network Function Virtualization (NFV) Overview</li> <li>Orchestration challenges in multi-site/multi-domain NFV/SDN based 5G Networks</li> </ul>
10.30-11.00	<b>Coffee Break</b>		
11.00-12.30	Zarrar Yousaf, NEC	Towards Autonomous MANO for Multi-tenant 5G infrastructures (2)	<ul style="list-style-type: none"> <li>Application of Machine Learning in NFV MANO operations</li> <li>Research use cases on ML-inspired MANO</li> <li>Overview of relevant open source projects and standardization activities</li> <li>Future challenges and research opportunities</li> </ul>
12.30-13:30	<b>Lunch Break</b>		
13.30-15.00	Marco Chiesa KTH	SDN (1)	<p>Internet Routing in the era of SDN programmable data planes:</p> <ul style="list-style-type: none"> <li>emerging trends in network programmability</li> <li>traffic engineering</li> </ul>
15.00-15.30	<b>Coffee Break</b>		
15.30-17.00	Marco Chiesa KTH	SDN (2)	<p>... continued:</p> <ul style="list-style-type: none"> <li>network robustness</li> <li>load balancing - inter-domain routing...</li> </ul>