

Evolved Licensed Shared Access eLSA

Presented by:

**Dr. Michael Gundlach,
Acting Chair ETSI TC RRS,
Chair ETSI RRS WG 1**

For: Webinar: "Spectrum
sharing model - LSA"

19.05.2021

ETSI TC RRS

ETSI TC RRS is responsible

- ✓ of standardization activities related to Reconfigurable Radio Systems encompassing system solutions related to Software Defined Radio (SDR) and Cognitive Radio (CR),
- ✓ to collect and define the related Reconfigurable Radio Systems requirements from relevant stakeholders;
- ✓ to identify gaps, where existing ETSI standards do not fulfil the requirements, and suggest further standardization activities to fill those gaps;
- ✓ to deliver its findings in the form of ETSI deliverables as appropriate;
- ✓ to provide ETSI with a major centre of expertise in the area of Reconfigurable Radio Systems.

ETSI TC RRS WG 1 has specified Licensed Shared Access (LSA) and evolved Licensed Shared Access (eLSA).

Experience of trials and any use of the standards, as well as results of research, may lead to revisions of the existing LSA and/or eLSA specifications.

Background

Motivation of eLSA

- ✓ Flexible Spectrum Access for Local Networks
 - ✓ Verticals have expressed their preference for operation of LTE/5G **private networks**
 - ✓ Growing interest to open the mobile market for **locally deployed** industrial networks
 - ✓ Several **national regulatory frameworks** emerging
 - ✓ Mid-band **spectrum for the industry** in Europe
- ✓ Spectrum Sharing RSPG
 - ✓ **Strategic topic** for the new RSPP (Radio Spectrum Policy Program)
 - ✓ In **licensed** (licensed-shared) and **unlicensed** bands
- ✓ H2020 Projects
 - ✓ METIS I and II discussed possible extensions of LSA and motivated the work on eLSA

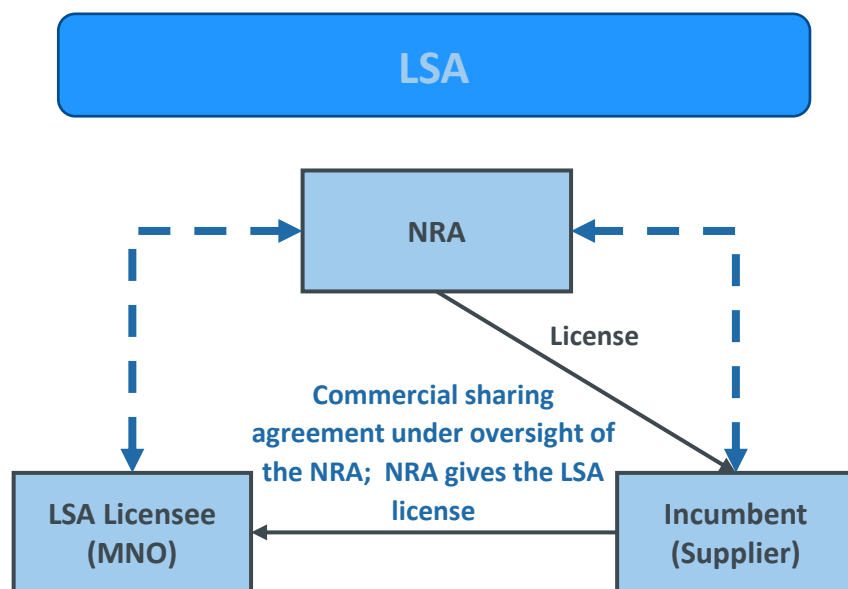
Objective of eLSA

What is the objective of eLSA?

- ✔ eLSA delivers a **flexible generic technical framework** for **demand-driven spectrum access**
 - ✔ Relies on existing European regulatory framework for LSA (licensed-shared access)
 - ✔ Frequency and radio technology agnostic
 - ✔ Tailorable to support different national spectrum access frameworks

LSA Principles

LSA is defined in ECC Report 205

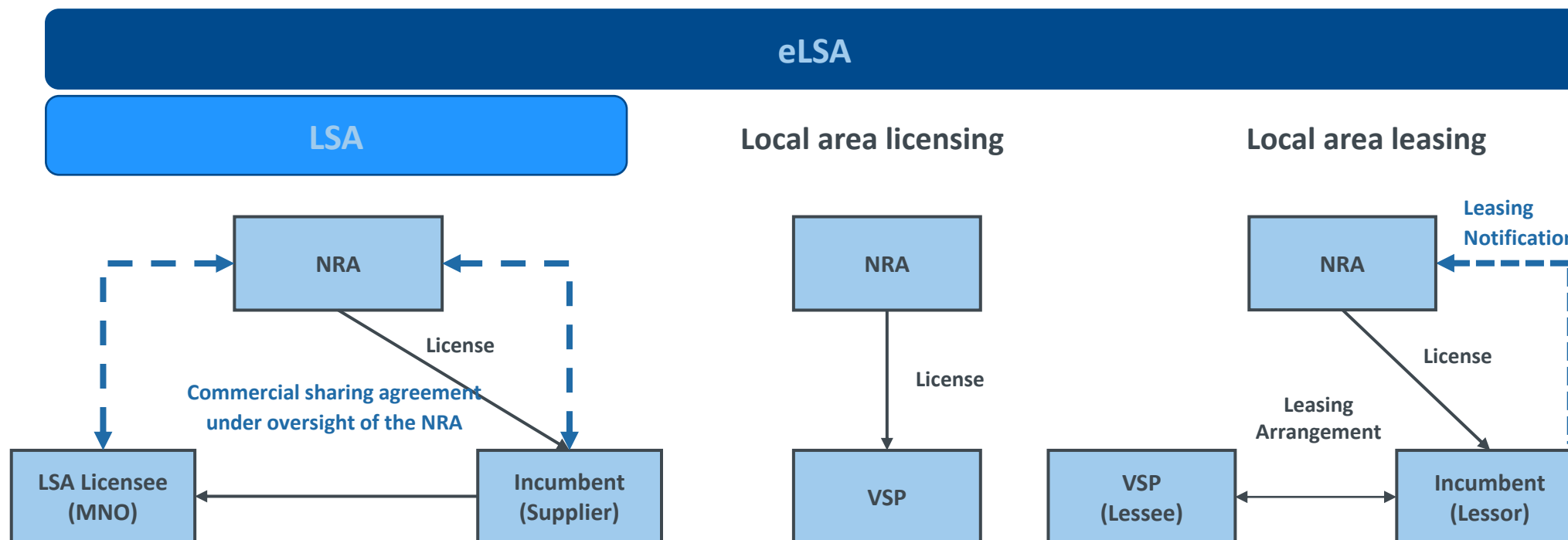


NRA: National Regulatory Authority
MNO: Mobile Network Operator

- ✓ The implementation of LSA relies on the concept of a “**sharing framework**” that is under the responsibility of Administration/NRA. Its development requires the involvement of all relevant stakeholders
- ✓ Details of sharing framework decided at **national level**, depending upon incumbent use
- ✓ **Sharing** can be done in the three dimensions: **time, frequency and area**
- ✓ The **first practical use case** of LSA will be to provide access to additional spectrum for mobile broadband services (MFCN)
 - ✓ ETSI TS 103 235, ETSI TS 103 379

eLSA extends LSA

eLSA adds local area licensing and leasing



NRA: National Regulatory Authority
 VSP: Vertical Sector Player
 MNO: Mobile Network Operator

Frequency & Radio Technology Agnostic Technical Framework

Summary of Working Principles of eLSA

Working Principles of eLSA

- ✓ Build upon LSA principles: sharing framework, sharing arrangements, rule sets
- ✓ System architecture as close as possible to LSA maximizing synergies at both implementation and regulatory levels
- ✓ Evolve the existing LSA technical work to
 - ✓ Many local licenses (introducing **allowance zones**) and secondary licenses
 - ✓ Get additional spectrum via leasing
 - ✓ Temporary flexibility: short vs long time
 - ✓ No limitation to a spectrum band but any spectrum band
 - ✓ Automatic dynamic request/relinquishment of local licenses/leases



The Standards People

Thank you

eLSA References

ETSI TC RRS

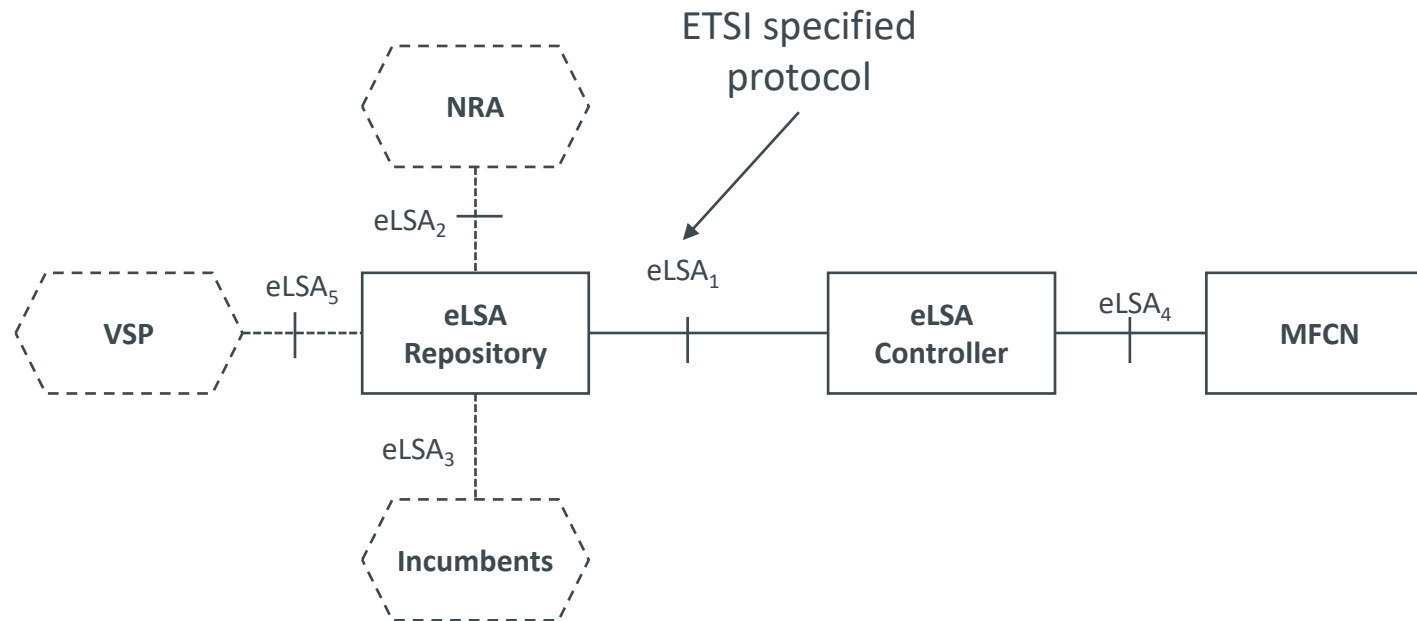
✓ Feasibility Study

- ✓ [ETSI. ETSI TR 103 588 V1.1.1 \(2018-02\): Reconfigurable radio systems \(RRS\); Feasibility study on temporary spectrum access for local high-quality wireless networks.](#)

✓ Technical Specifications

- ✓ [ETSI TS 103 652-1 V1.1.1 \(2019-02\): Reconfigurable radio systems \(RRS\); evolved Licensed Shared Access \(eLSA\); Part 1: System requirements.](#)
- ✓ [ETSI TS 103 652-2 V1.1.1 \(2020-01\): Reconfigurable radio systems \(RRS\); evolved Licensed Shared Access \(eLSA\); Part 2: System architecture and high-level procedures.](#)
- ✓ [ETSI TS 103 652-3 V1.1.1 \(2021-02\): Reconfigurable radio systems \(RRS\); evolved Licensed Shared Access \(eLSA\); Part 3: Information elements and protocols for the interface between eLSA Controller \(eLC\) and eLSA Repository \(eLR\).](#)

General Architecture and Interfaces



eLSA supporting both leasing and local licensing – principal sketch



Related Regulatory Work

RSPG

- ✓ **2nd Opinion on 5G networks, 2018:**
Need for more flexibility in 5G authorization approaches including licensed shared used between different users, geographical sharing, dynamic approaches based on GLDB, leasing and trading
- ✓ RSPG 2020
- ✓ Upcoming consultation on Spectrum Sharing

CEPT

- ✓ **ECC Report 205:** Licensed Shared Access (LSA)
- ✓ **ECC Report 254:**
Operational guidelines for spectrum sharing to support the implementation of the current ECC framework in the 3600-3800 MHz range

NRAs: novel local licensing approaches