

# 5G Standardization

The background of the slide is a photograph of two divers swimming through a dark cave. They are silhouetted against a bright, circular opening at the end of the cave, which is filled with light and some bubbles. The overall color palette is dark blue and black, with the bright light from the cave entrance.

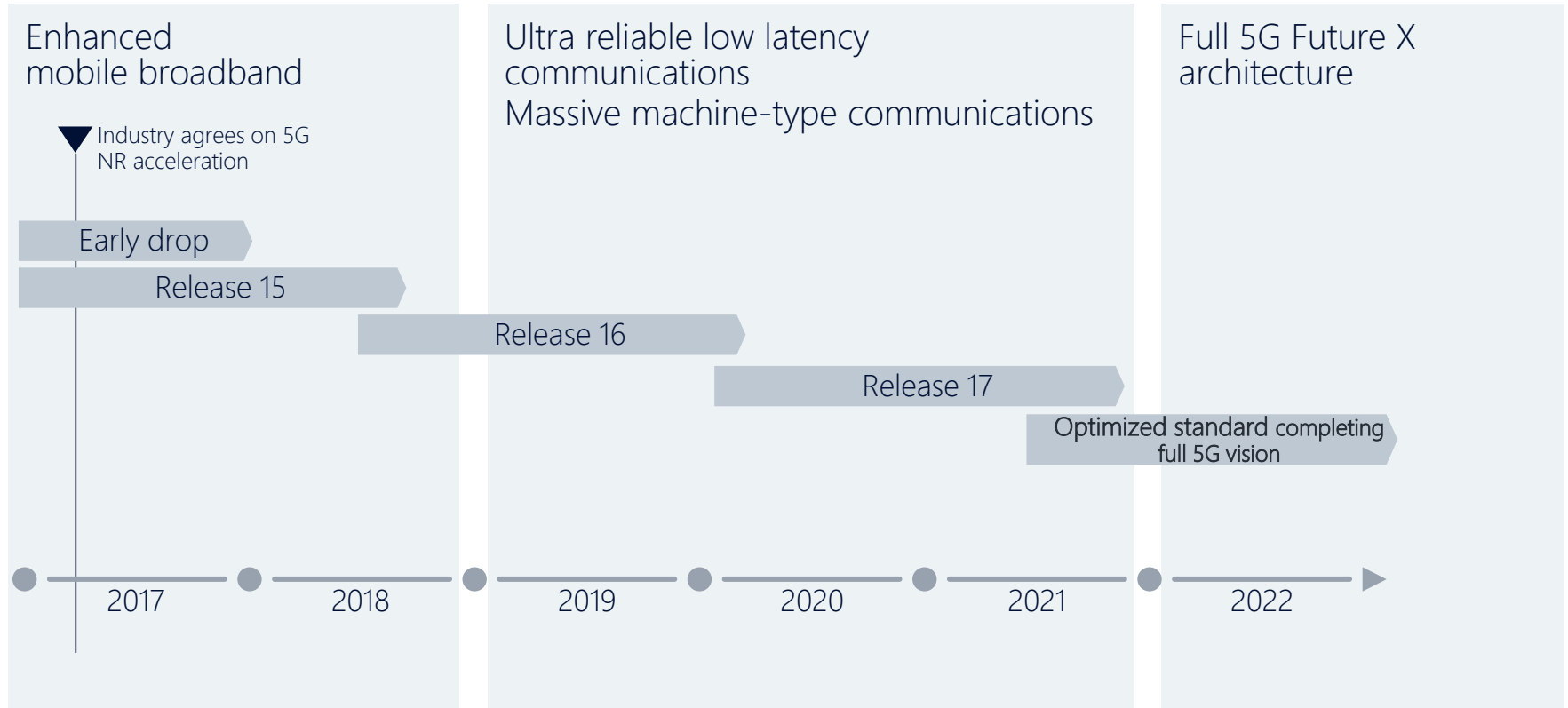
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# 5G standards



It is important that regulators follow 3GPP standardized technologies and spectrum in order to benefit from economies of scale and from the ecosystem.

# 5G timelines



# 3GPP Release 15 – Important milestone

- The September Release 15 should be the version on top of which we should only see “backward compatible change requests” .
- The content of Release 15 for both Radio and 5G Core Network is mature.
- Release 15 includes Stand Alone and Non-Stand Alone variants.
- 5G commercial products should be based on this version.
- There are still pending issues to be addressed.
- Network Management Standard was also approved.
- Release 16 work is ramping up in 3GPP RAN working groups.
- However, the amount of time allocated in Q4 2018 for Release 16 remains limited.



# Additional important milestones



- Virtualization and Automation & Application Enablement
  - Zero Touch Network and Services Architecture
  - ETSI standard
- Fixed Networks Standards
  - Broadband forum at IEEE
- Optical
  - MEF Optical Transport Services
- Radio over Ethernet
  - IEEE Radio over Ethernet Encapsulations and Mappings
  - ORAN
    - First set of working groups meetings in MWC Americas



# Spectrum standards

## Low bands

Coverage/Indoor penetration

600 MHz

700 MHz

850 MHz

## Mid bands

Coverage/Capacity

2.5 GHz

3.5 GHz (most popular)

4.5 GHz

6 GHz

## High bands

Extreme broadband

24-28 GHz

37-40 GHz

64-71 GHz

80-90 GHz

Dedicated spectrum for verticals would benefit MNOs and industry overall.

An underwater scene with several divers in silhouette against a bright sun at the surface. They are gathered around a thick rope. The water is clear blue, and the sun creates a strong lens flare effect.

NOIKKA