



Nasjonal
kommunikasjons-
myndighet

Veien mot Direct-to-Device (D2D) – regulatoriske utfordringer

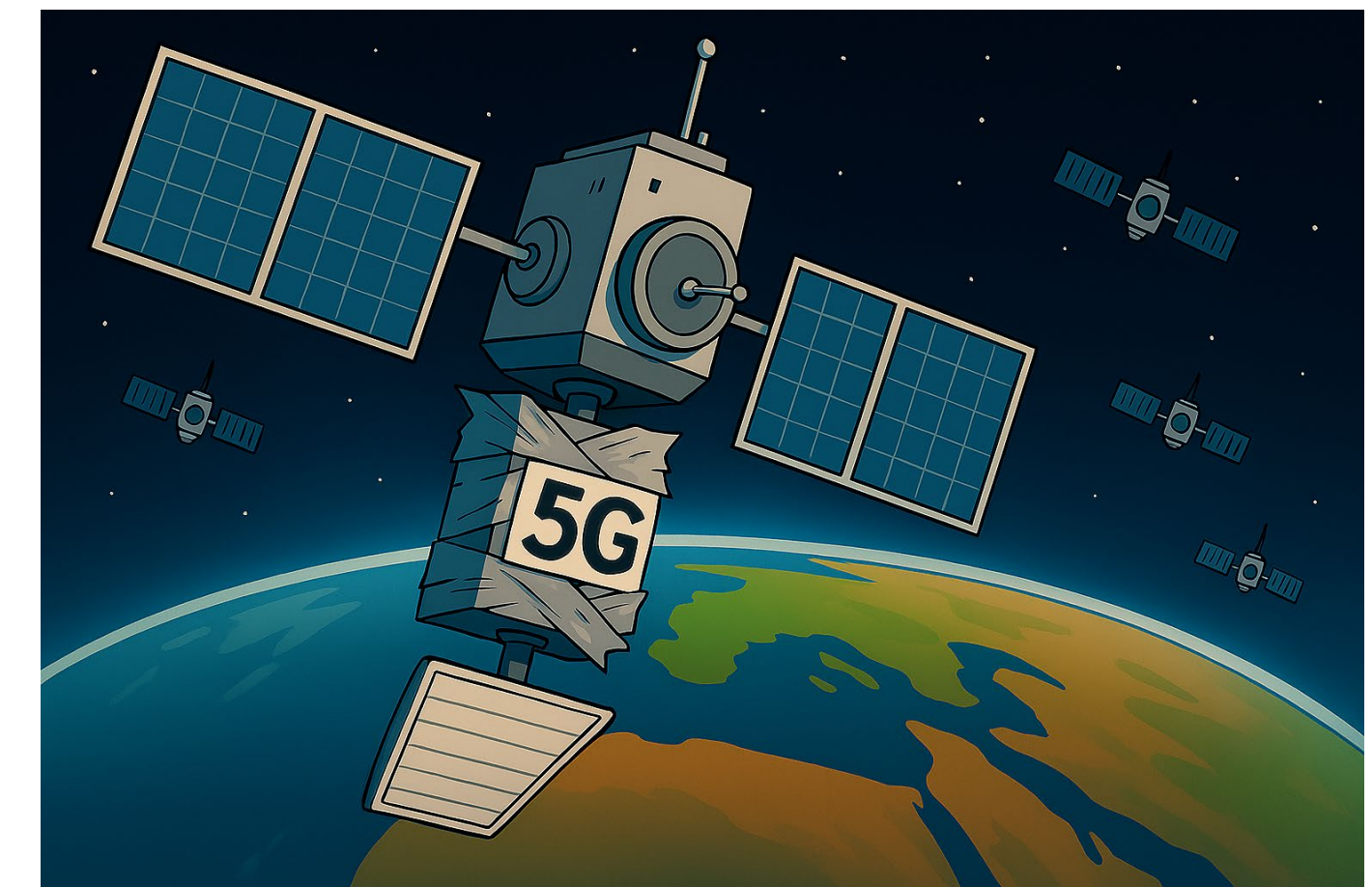
Øyvind Murberg, sjefingeniør, Nkom

WRC-27 – Agenda Item 1.13

1.13 to consider studies on possible new allocations to the mobile-satellite service for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage, in accordance with [Resolution 253 \(WRC-23\)](#).

- Med trykk på: *“to complement terrestrial IMT network coverage”*
- Kun FDD-bånd (Europa ser også på TDD-bånd i EU-mandat)

Directionality	
Uplink (MHz)	Downlink (MHz)
814/824-849	859/869-894
880-915	925-960
832-862	791-821
698-716	716-746
776-798	746-768
698-748	753-803
1427-1470	1475-1518
1920-1980	2110-2170
1710-1785	1805-1880
1850-1920	1930-2000
1710-1780	2110-2180
2000-2020	2180-2200
2010-2025	1880-1920
2305-2320	2345-2360
2500-2570	2620-2690



Kilde: Copilot

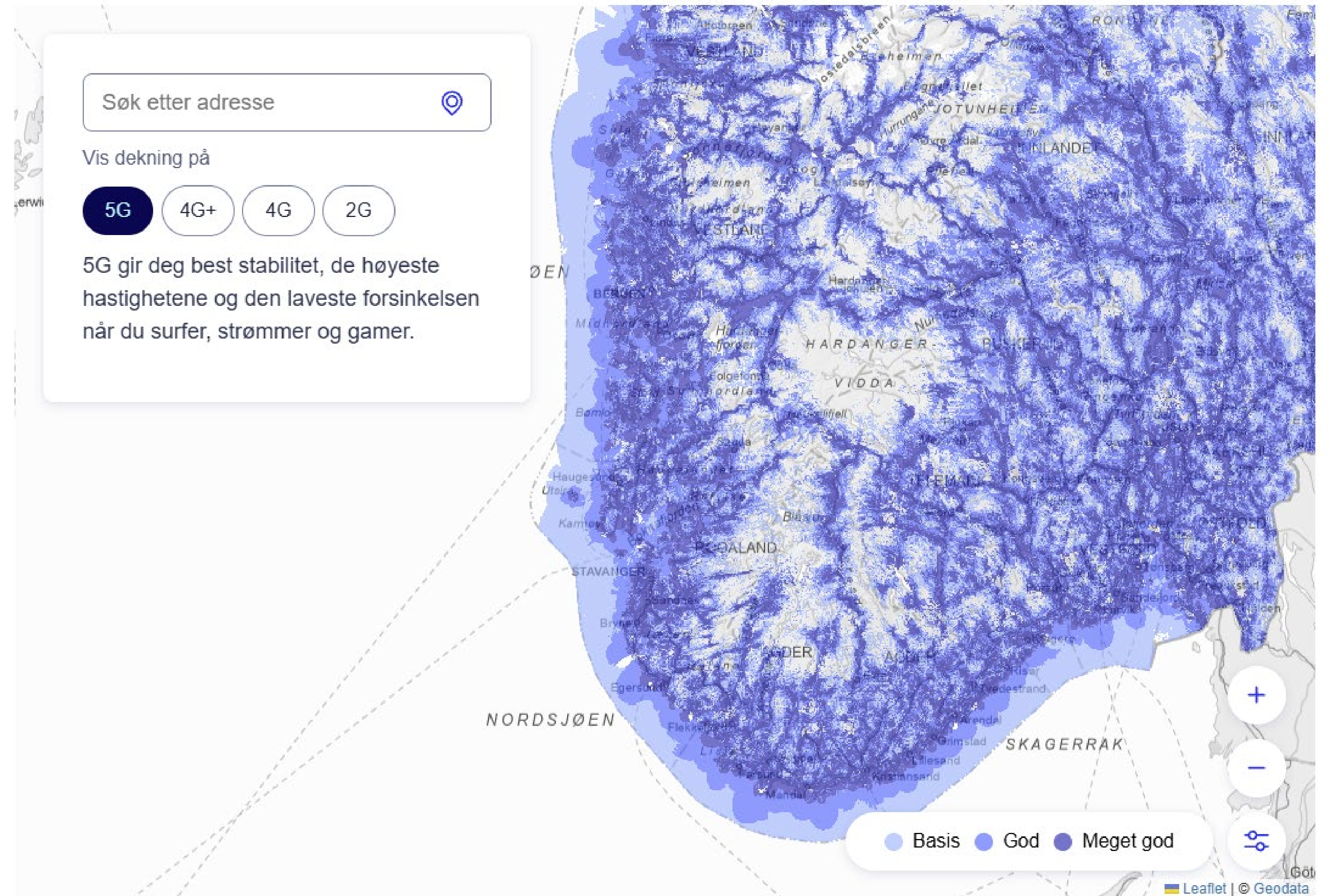
Arbeidshypotese:

Tilby komplementær mobildekning uten å degradere dekningen fra bakkebasert nettverk, i frekvensbånd tildelt de bakkebaserte nettverkene.

Norge

Sammensatte dekningshull med begrenset størrelse.

Smalt langstrakt land med lang grense til naboland.



Hovedutfordringer

Skepsis (både sunn og usunn) – to «erkerivaler» møtes

Tekniske:

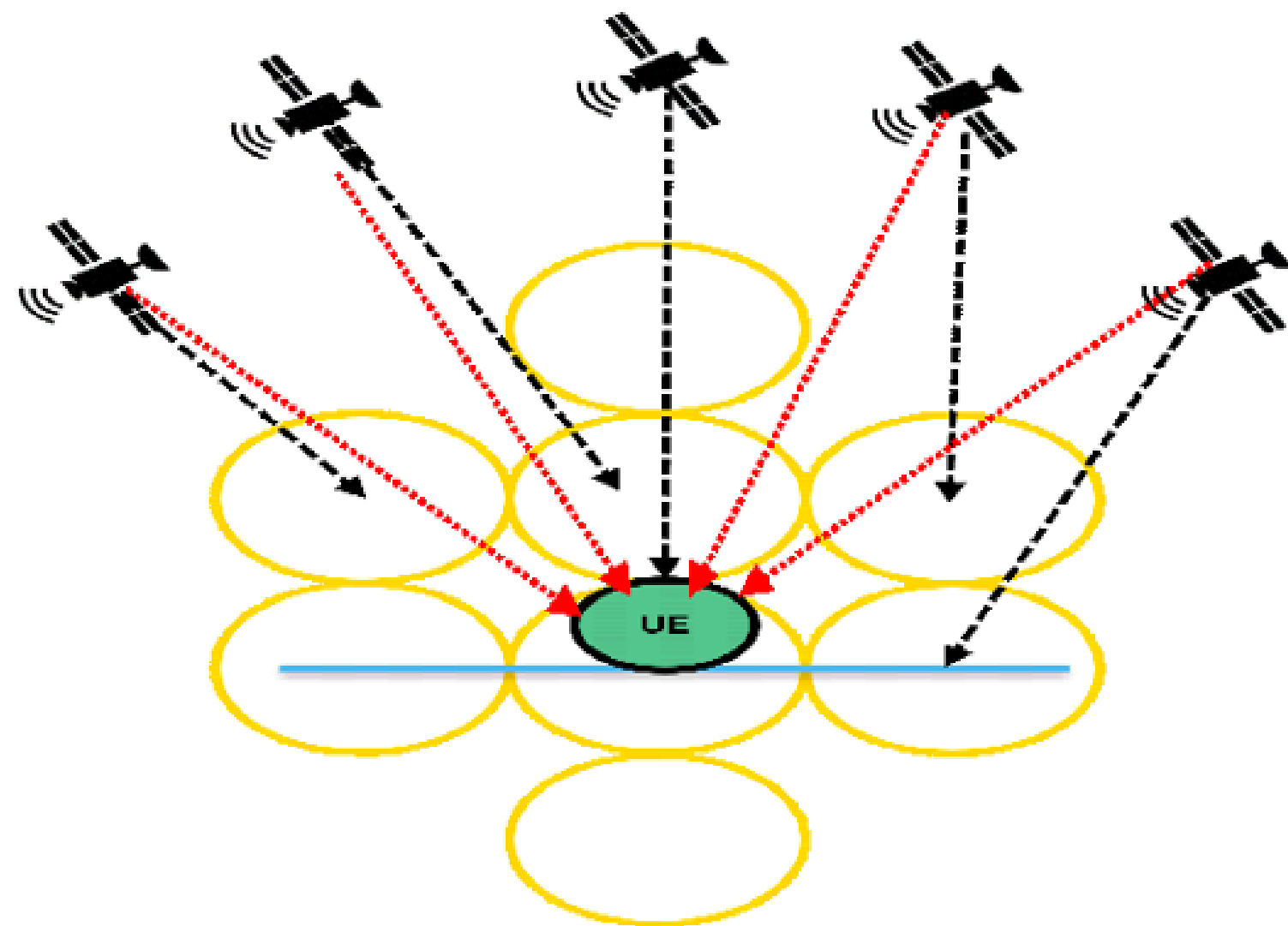
- Interferens inn i UE og BS
- Interferens inn i naboland
- Akkumulert interferens
- Territorialfarvannet og offshore

Regulatoriske/juridiske:

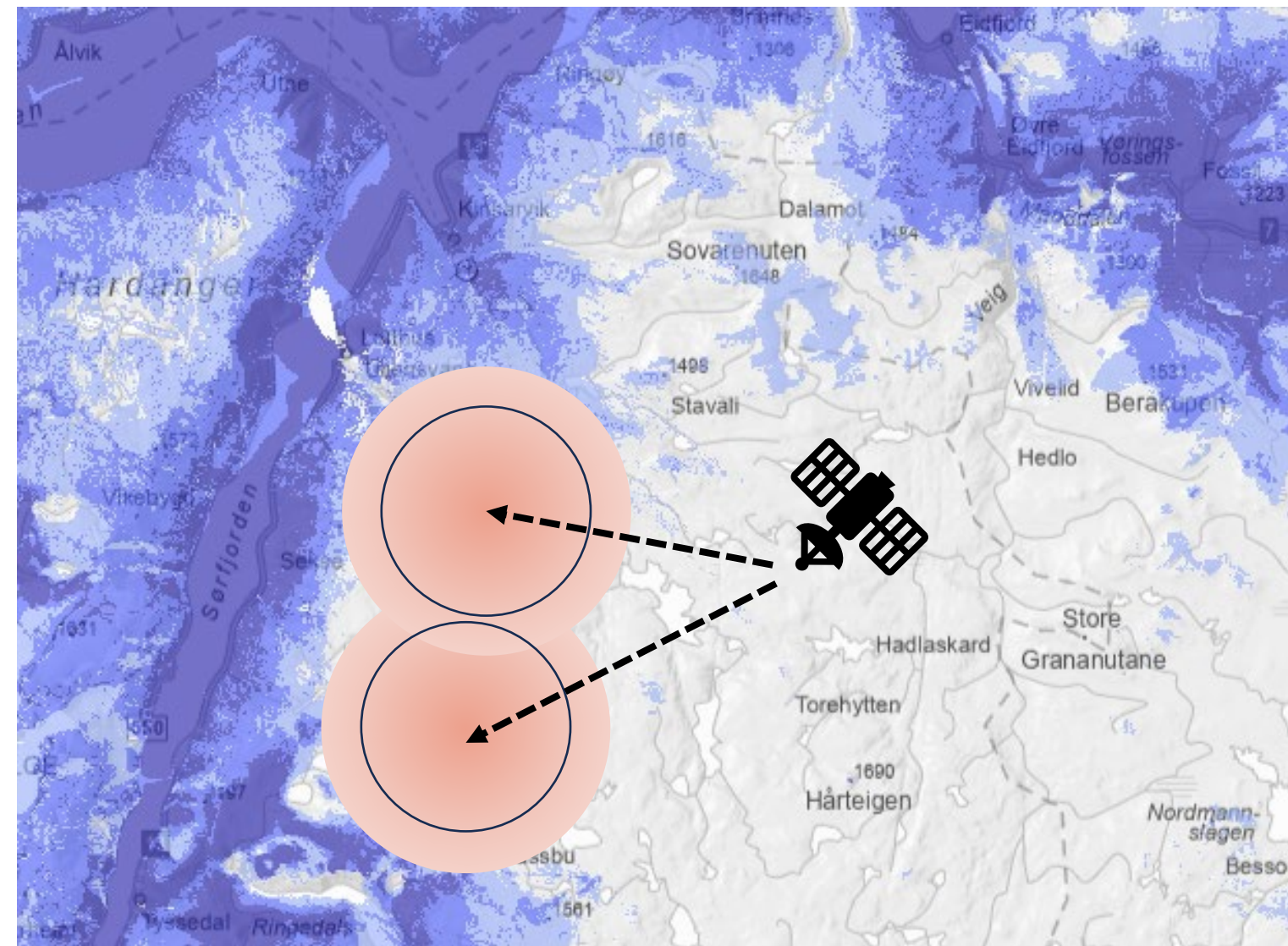
- Avtale mellom MNO og D2D-operatør
- Utenlandske og ikke-Europeiske D2D operatører
- Regulator forholder seg kun til MNO?

Interferens inn i UE og BS

Samme FDD retning

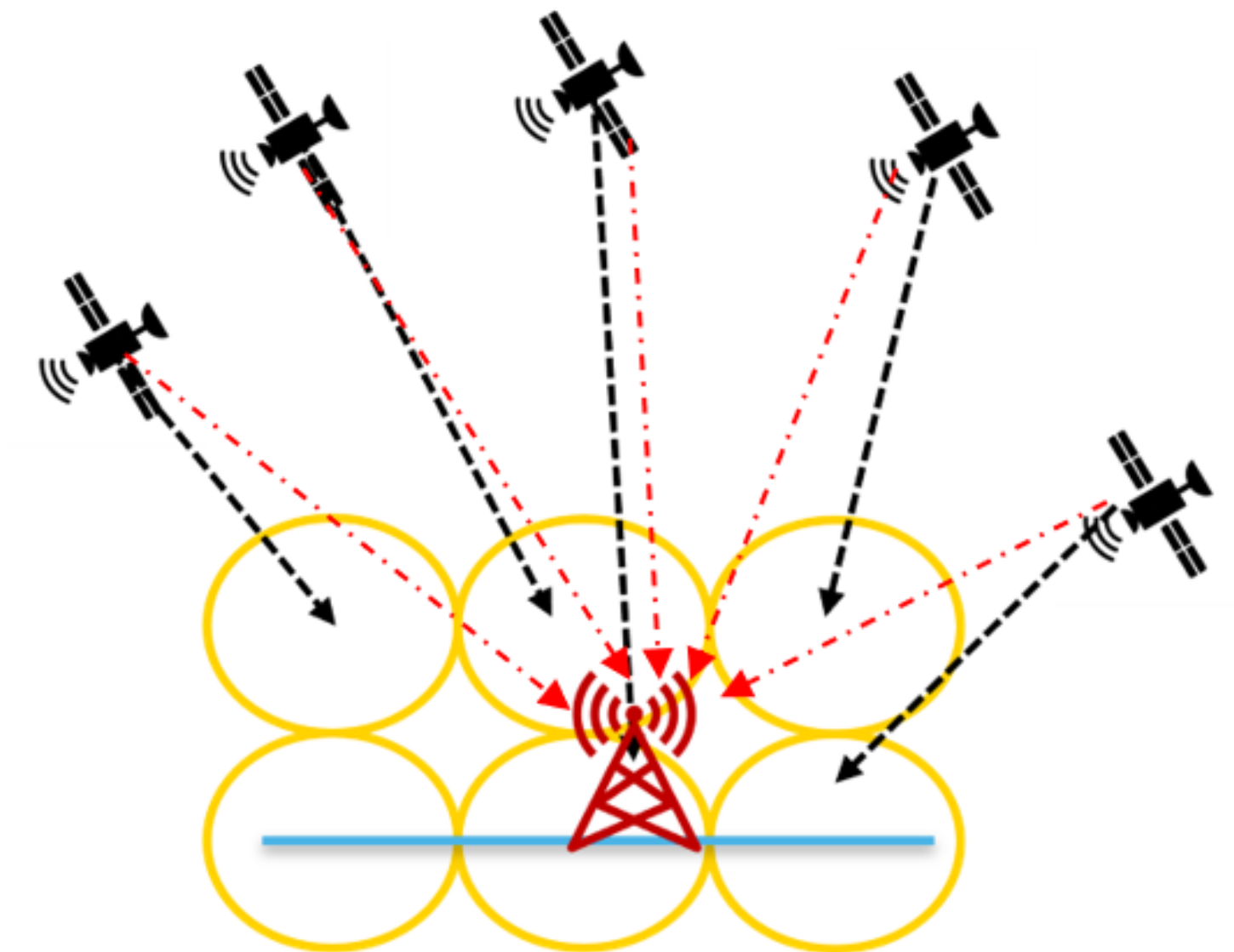


Kilde: ECC PT1(26)047 Annex 26



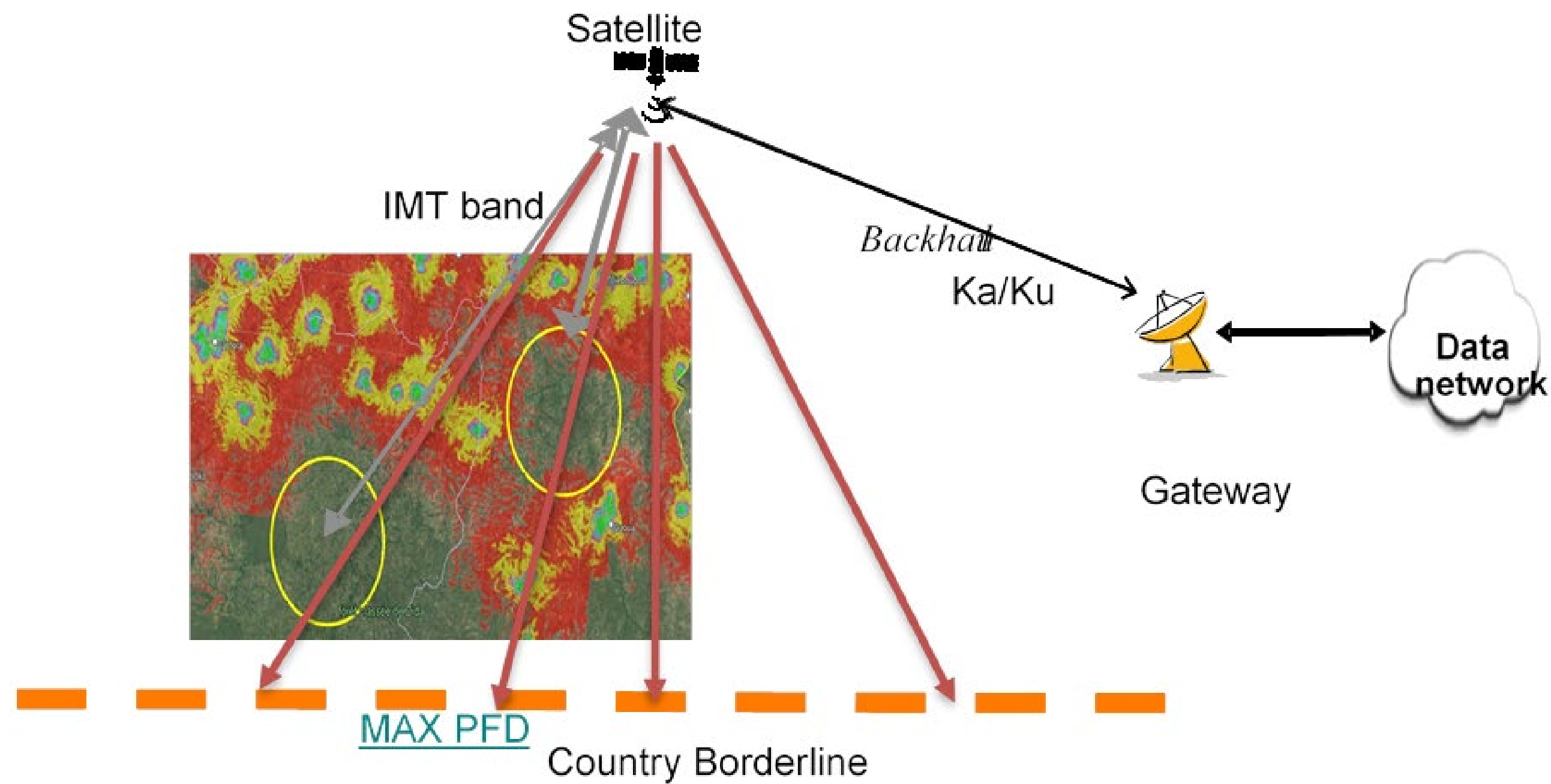
Kilde: Telenor dekningskart

Ulik FDD retning

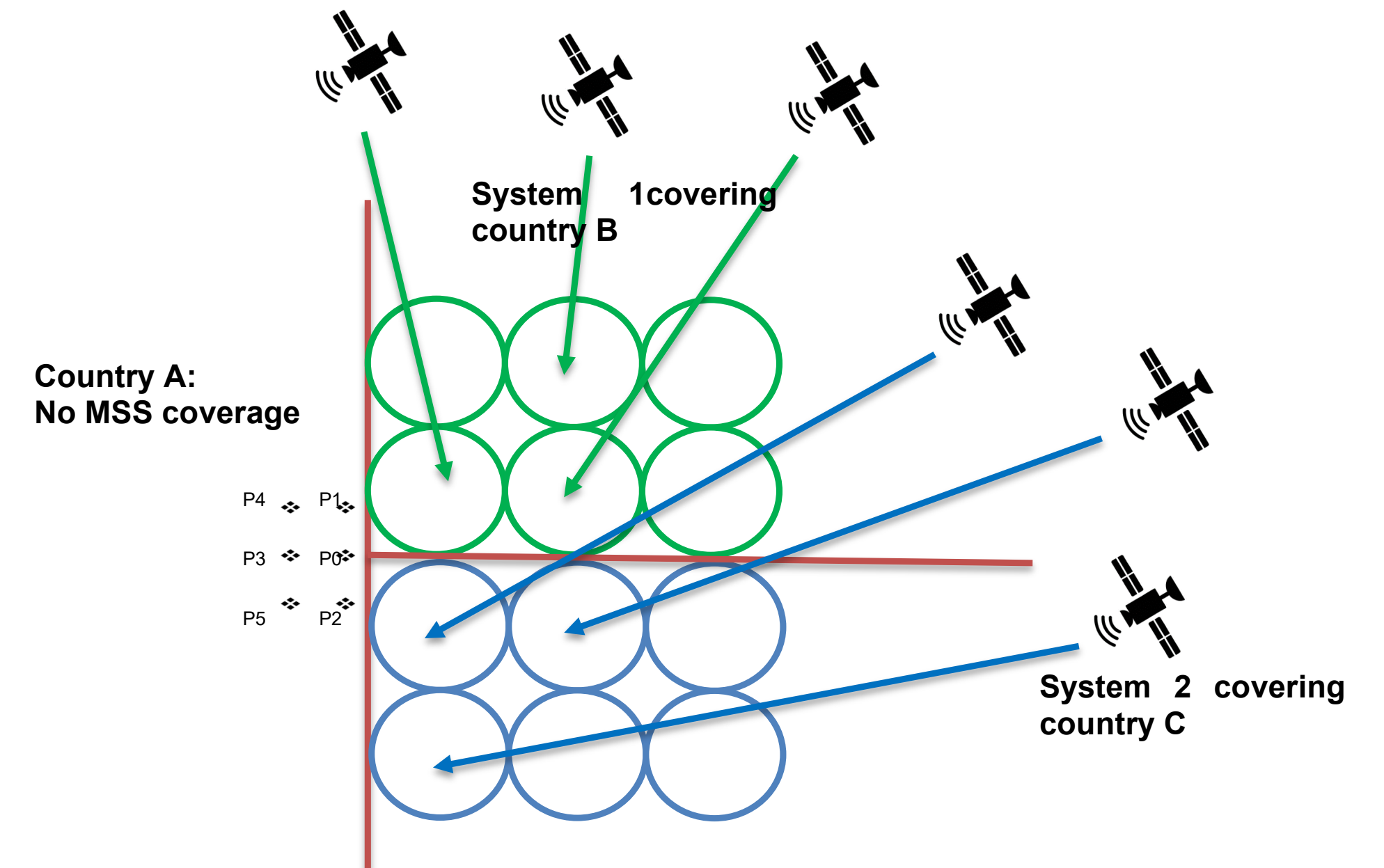


Kilde: ECC PT1(26)047 Annex 26

Interferens inn i naboland og akkumulert interferens



Kilde: ECC PT1(26)047 Annex 26



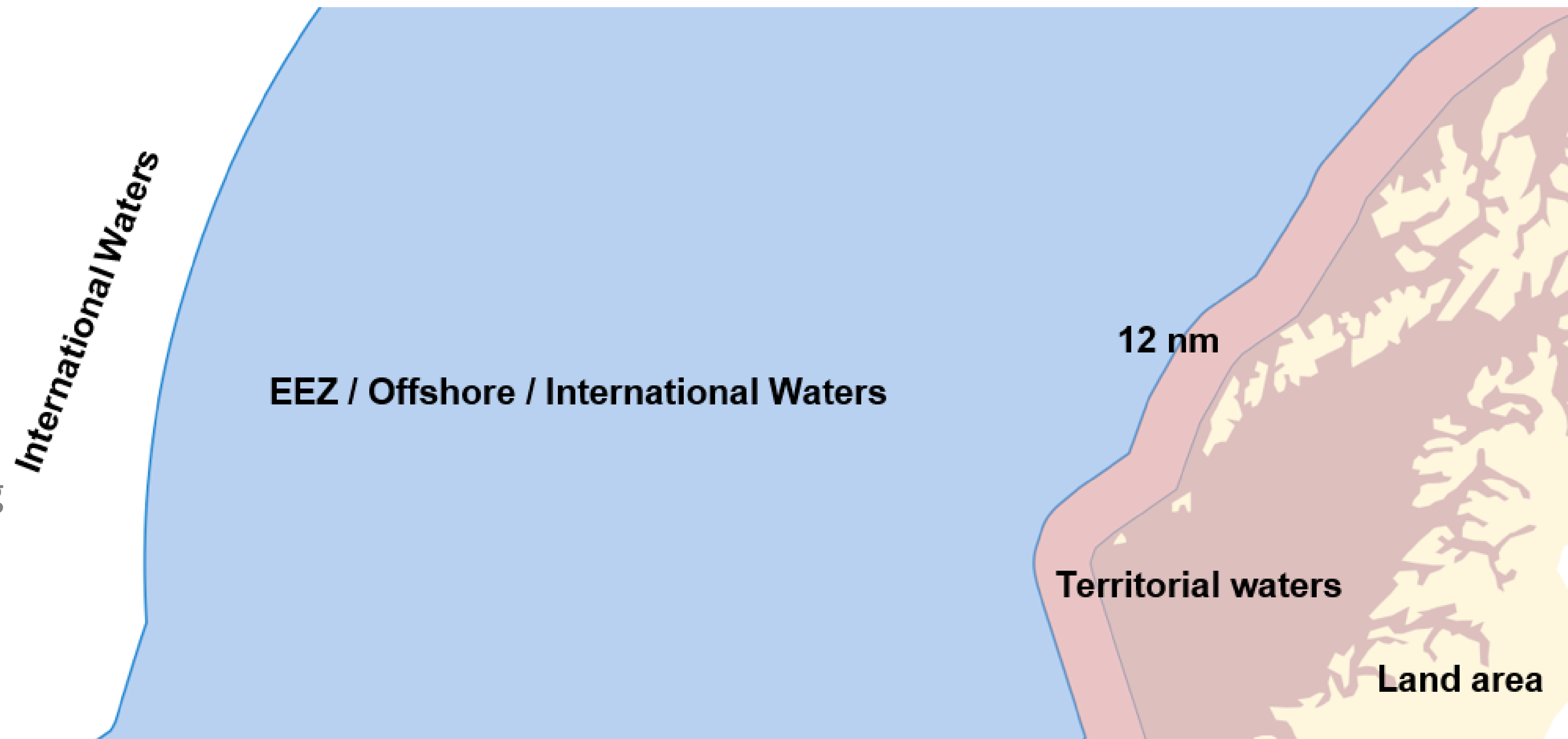
Kilde: SE40 draft report WI49

Territorialfarvannet og offshore

Norge jobber for:

Ikke forringe dekningen fra landbaserte nettverk ut i havet.

Ikke forringe dekningen på og fra Offshore installasjoner.



Kilde: CEPT Draft Brief on AI 1.13



Fra D2D IMT spektrum til dedikert MSS spektrum?

SpaceX buys \$17 billion worth of satellite spectrum to beef up Starlink broadband service

News By Tereza Pultarova published September 10, 2025

SpaceX promises a step change in performance for cell phone users around the world.



SpaceX is looking to add more direct-to-cell capability to its Starlink satellite-internet service. (Image credit: SpaceX)

Kilde: space.com

BREAKING | INNOVATION
Amazon Buys Satellite Firm For \$11.6 Billion To Catch Up With SpaceX's Starlink
By [Alicia Park](#), Fellow. I cover tech and innovation.
Published Apr 14, 2026, 12:46pm EDT, Updated Apr 14, 2026, 01:06pm EDT

TOPLINE
Amazon announced Tuesday an agreement to acquire satellite company Globalstar for \$11.57 billion to expand its satellite business, as it aims to compete with SpaceX's Starlink business.

(Photo by David Ryder/Getty Images)
GETTY IMAGES

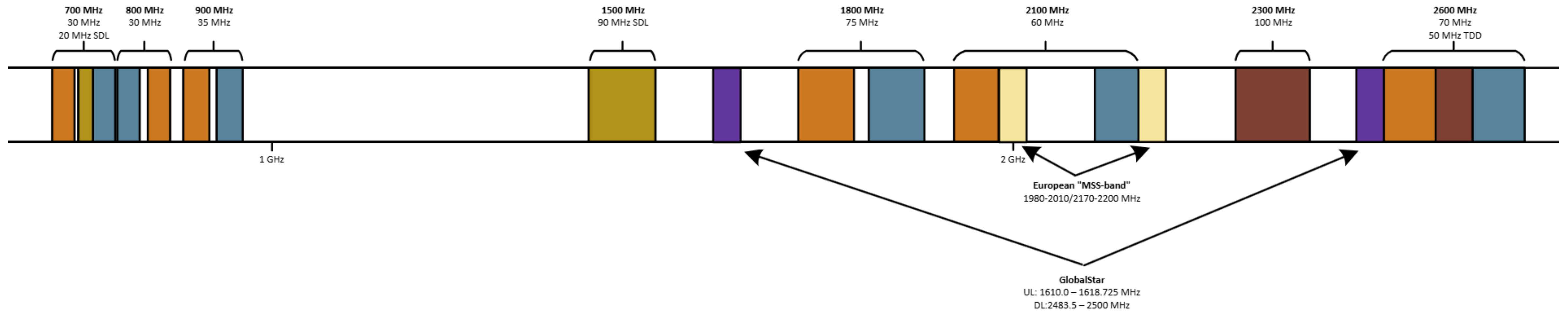
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Kilde: Forbes

Fra D2D IMT spektrum til dedikert MSS spektrum?

UL DL SDL TDD



Spørsmål?