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Mode S Interrogator Code Allocation Status - Cycle 30

Surveillance/MICA Workshop

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Mode S Interrogator Code Allocation Cell
EUROCONTROL

Current Cycle - IC Allocation Cycle 30

Key dates of the MICA Cycle 30:

- Requirements Freeze Date (start of Cycle 30) : 31 January 2019
- Draft Proposals Issue Date (start of Review Period) : 28 February 2019
- State Agreement : required by 28 March 2019
- Implementation Period: 25 April 2019 – 17 July 2019

MICA Cycle 31 will start the 18 July 2019

Cycle 29 and 30 - New radar installation

- **625 ATC/AD Mode S radar being allocated an operational IC (Cycle 30 included):**
 - 526 ATC/AD allocated in ICAO European region
 - 99 ATC/AD allocated in ICAO Middle East region

- Ad-Hoc during Cycle 29 timeframe → 4 new ATC/AD Mode S radar:
 - Egypt (2): NANSC Katamia and Portsaid
 - Iran (1): IRAN CAA RSM 970 S
 - Italy (1): Italian AF Lampedusa

- MICA Cycle 29 → 24 new ATC/AD Mode S radar:
 - Denmark (1): NAVIAIR Roskilde (Radar 8)
 - Egypt (1): NANSC Luxor
 - Hungary (2): HU AF Kecskemet and Papa
 - Iran (1): IRAN CAA OIKB ASR
 - Ireland (1): IAA Tooman
 - Netherland (1): RNLAF SMART-L GB Waadhoeke
 - Portugal(1): NAV Portugal LPRR
 - Saudi Arabia (13): RSAF
 - Spain (2): ENAIRE Randa and Barcelona
 - UK (1): RAF Whittering Deployed

IC Allocation Principle

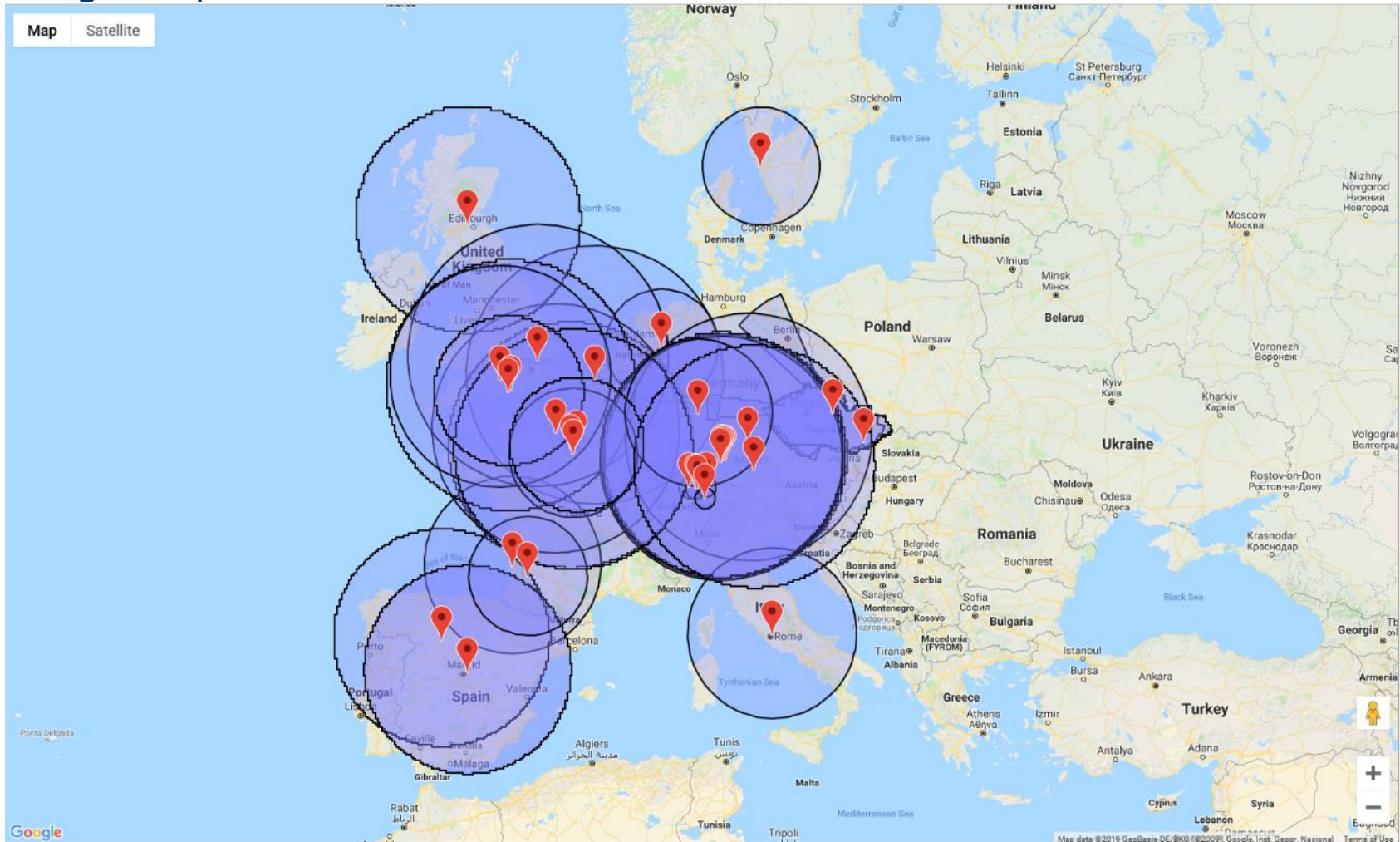
- In ICAO EUR region, II codes and matching SI codes were not allocated to Mode S radar with overlapping coverage before MICA Cycle 20
- From MICA Cycle 20, II codes and matching SI codes are allocated to Mode S radar with overlapping coverage :
 - Mode S radar operating on **SI codes** have to enable the **II/SI Code Operation**
 - To acquire and not lock on the matching II code aircraft which are not SI capable
 - Mode S radar operating on **II codes** have to enable the **II/SI Code Operation**
 - To not lock on the II code aircraft which are not SI capable in order to enable the acquisition by Mode S radar having an overlapping coverage and operating on a SI code matching the II code
- In ICAO MID region, II codes and matching SI codes are still not allocated to Mode S radar with overlapping coverage:
 - II codes are not allocated in order to allocate the 4 matching SI codes
 - Mode S radars operating on **SI codes** had to enable the **II/SI code operation**:
 - To acquire on the matching II code aircraft which are not SI capable
 - Aircraft which are not SI capable SHALL NOT be locked on the matching II code to allow the acquisition by all Mode S radar operating on SI codes matching the II code

Test, Research and Development

- 49 TRD Mode S interrogators sharing II 14, SI 14, SI 30, SI 46 or SI 63 in MICA Cycle 30
- Some TRD Mode S interrogators have been allocated the II 14 and a temporary matching SI Code (SI 14, SI 30, SI 46 or SI 62)

TRD – II 14 - Cycle 30

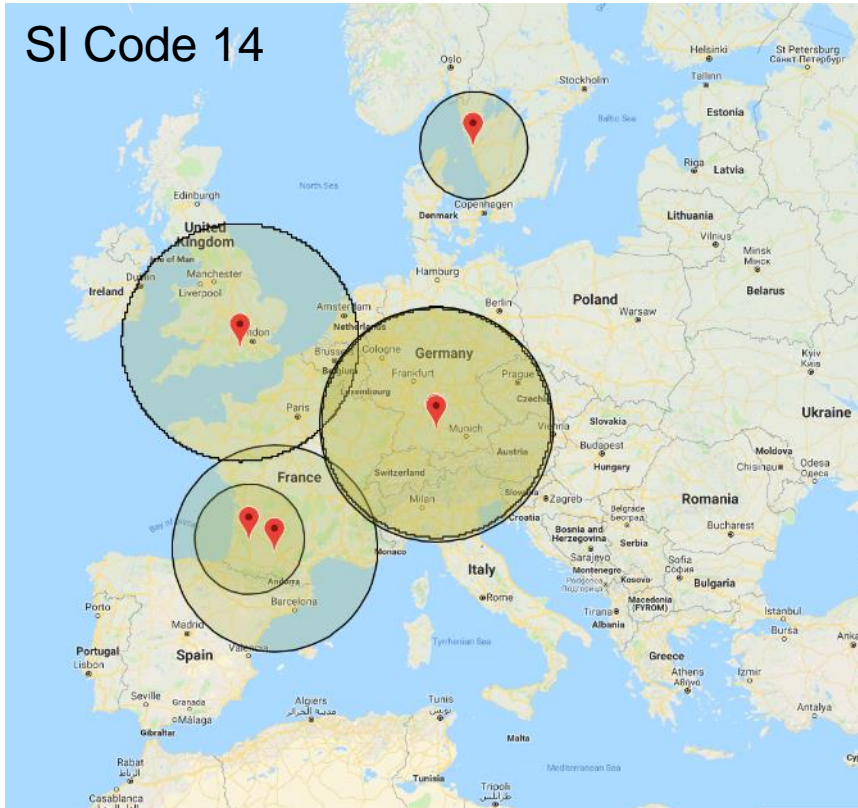
Google Map screenshot from the MICA website



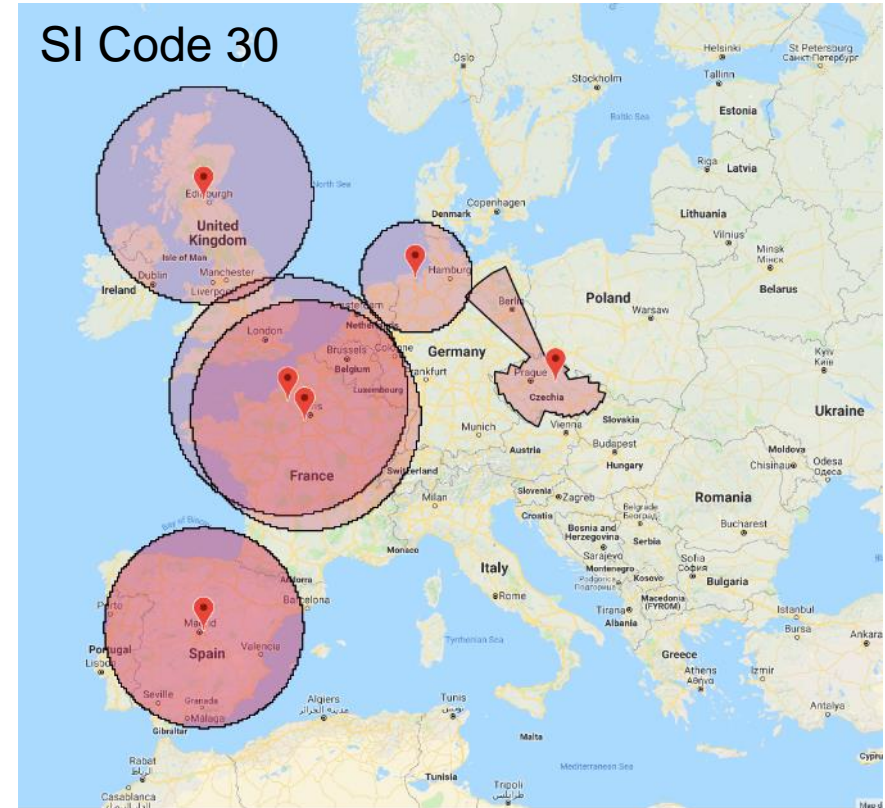
TRD – SI 14 and SI 30 - Cycle 30

Google Map screenshot from the MICA website

SI Code 14



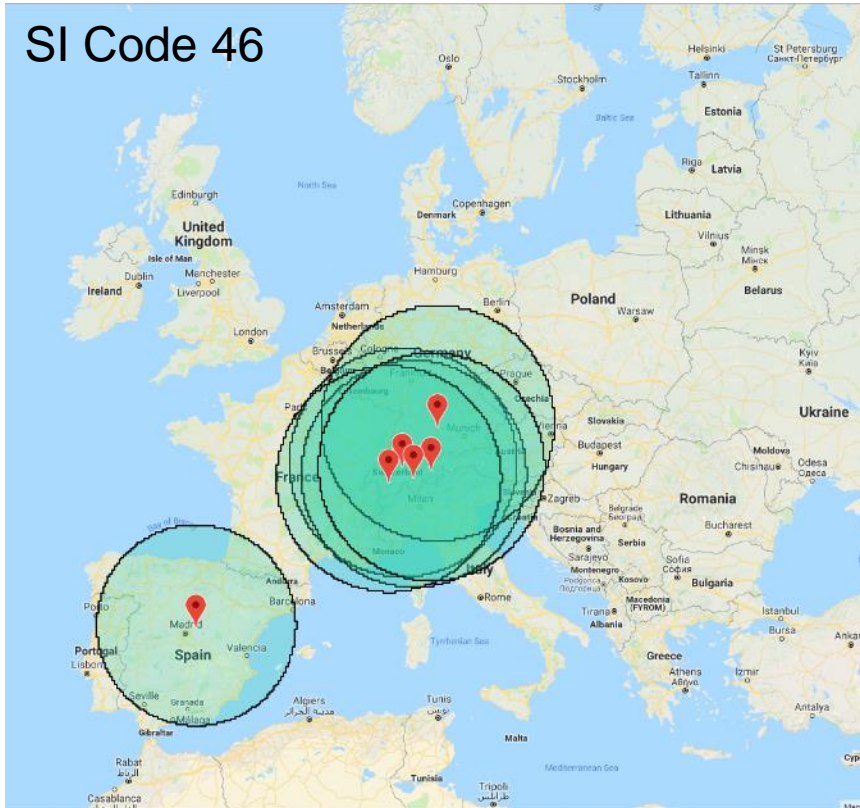
SI Code 30



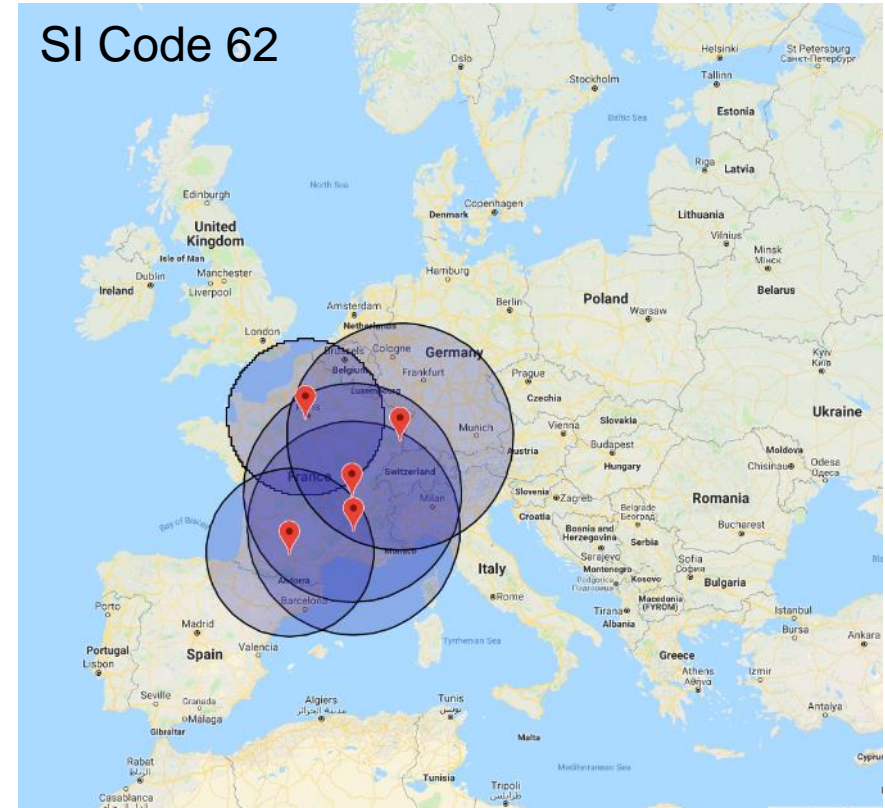
TRD – SI 46 and SI 62 - Cycle 30

Google Map screenshot from the MICA website

SI Code 46



SI Code 62

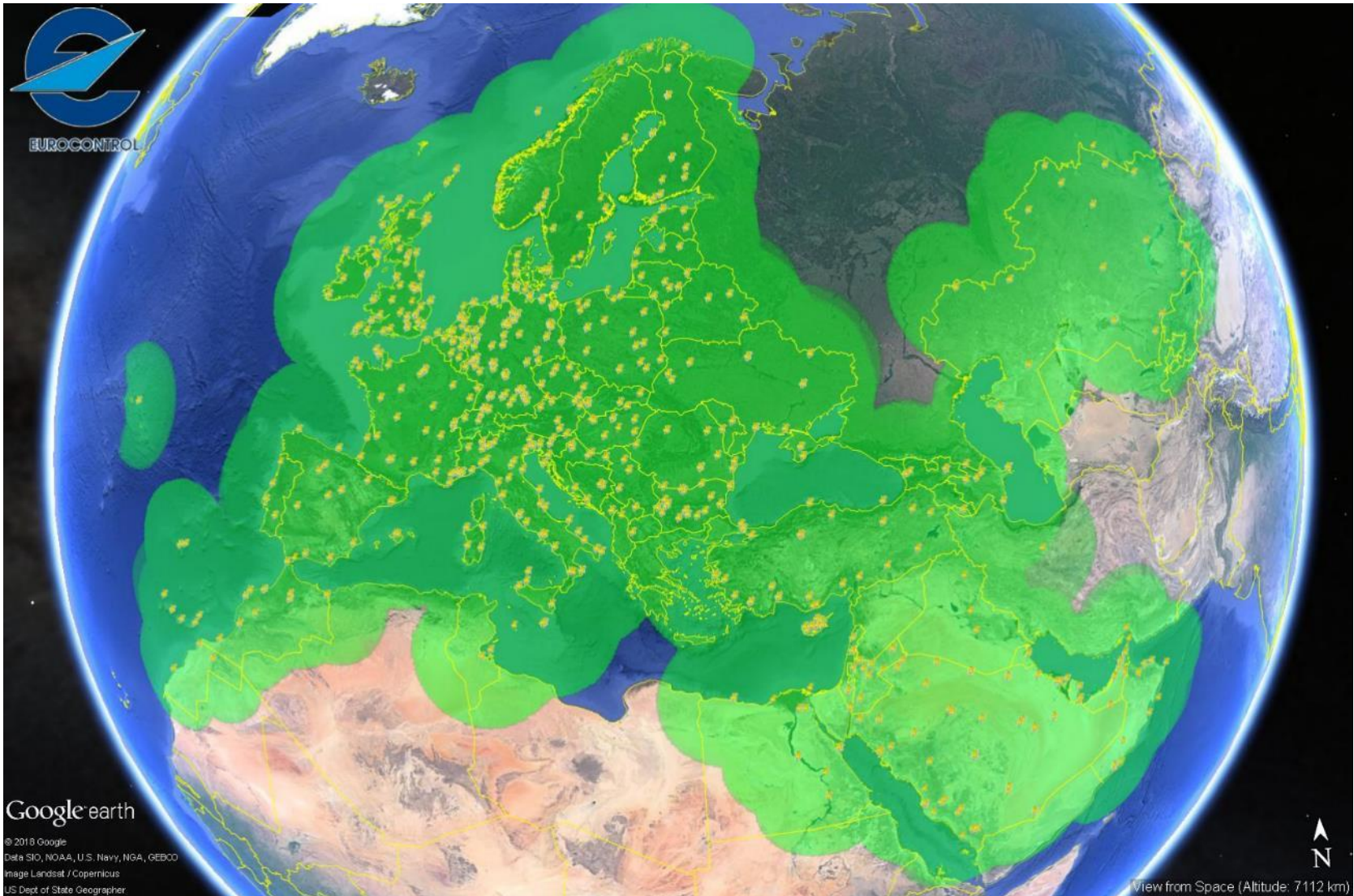


IC Allocation Status

Cycle 30

Surveillance and Lockout Coverage

Global Overview - Cycle 30



Google earth

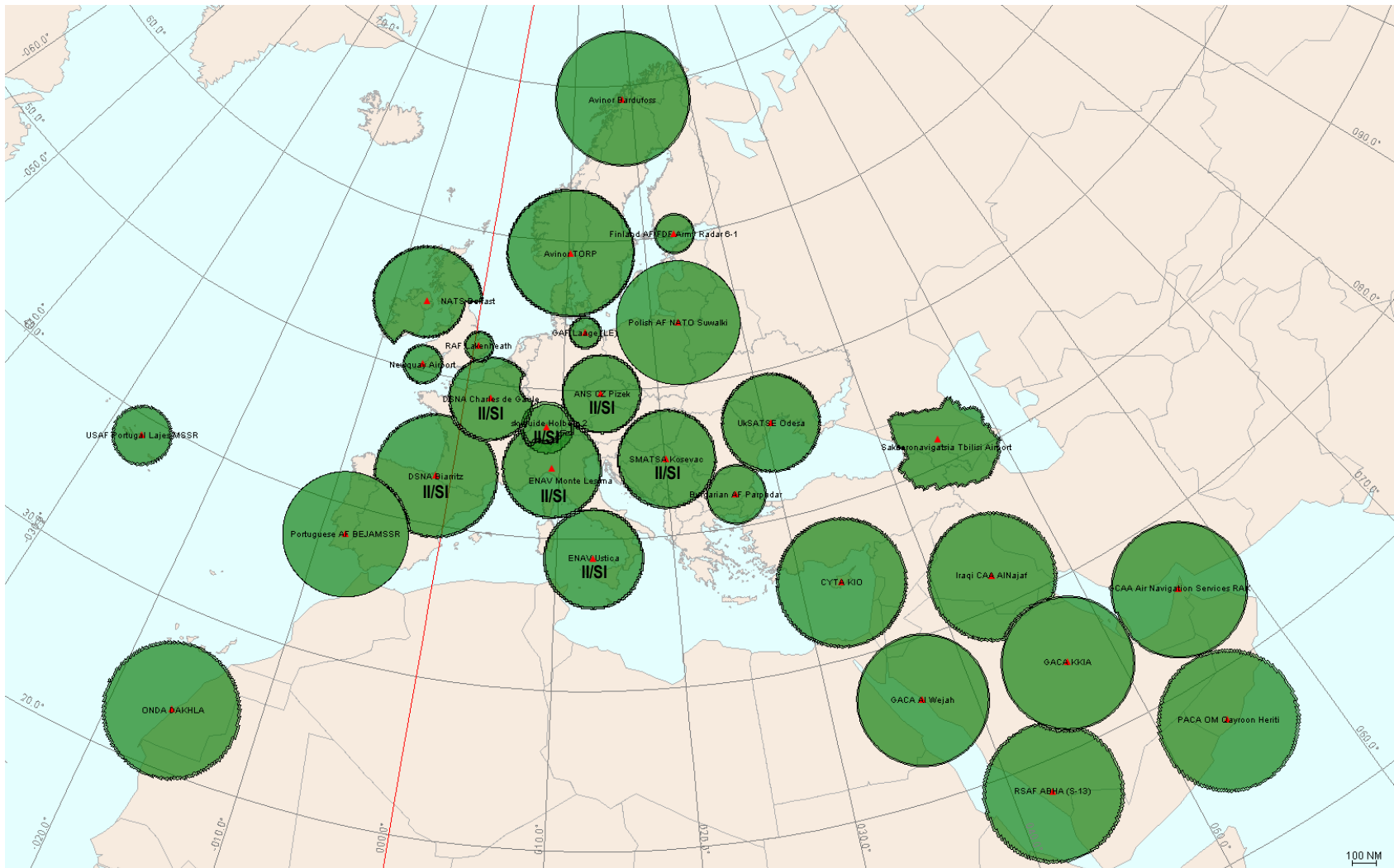
© 2018 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
US Dept of State Geographer

View from Space (Altitude: 7112 km)

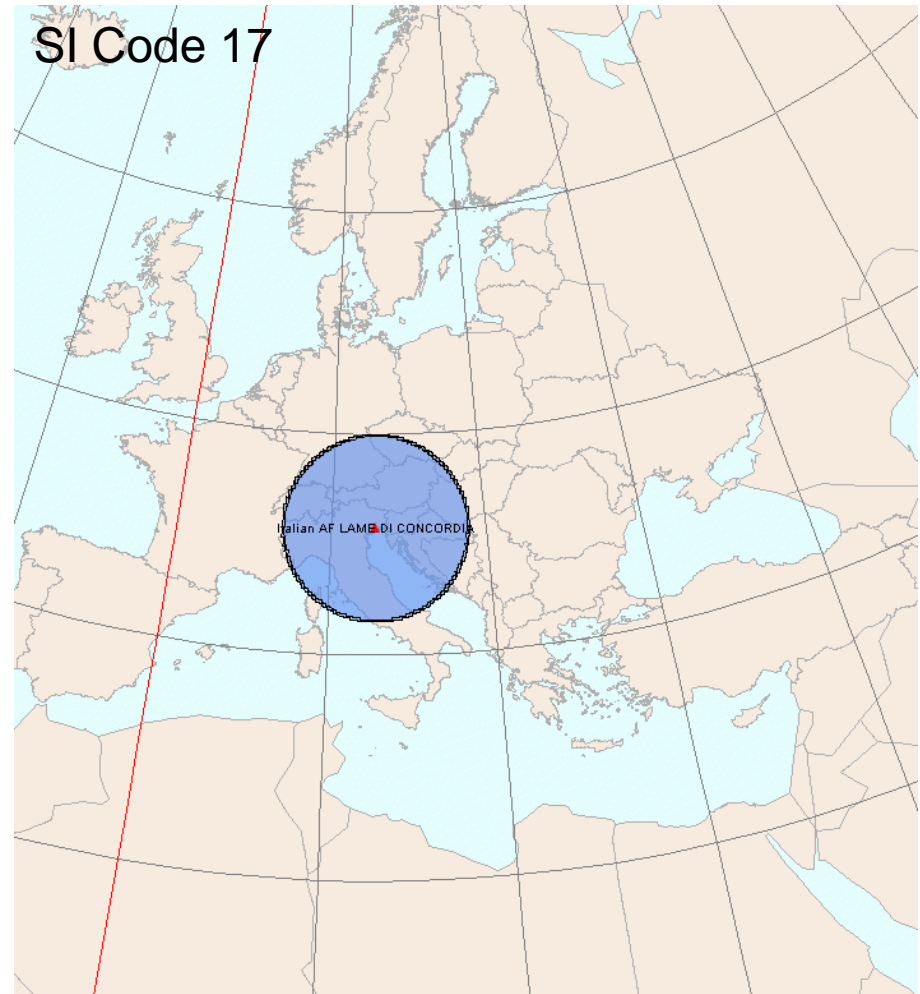
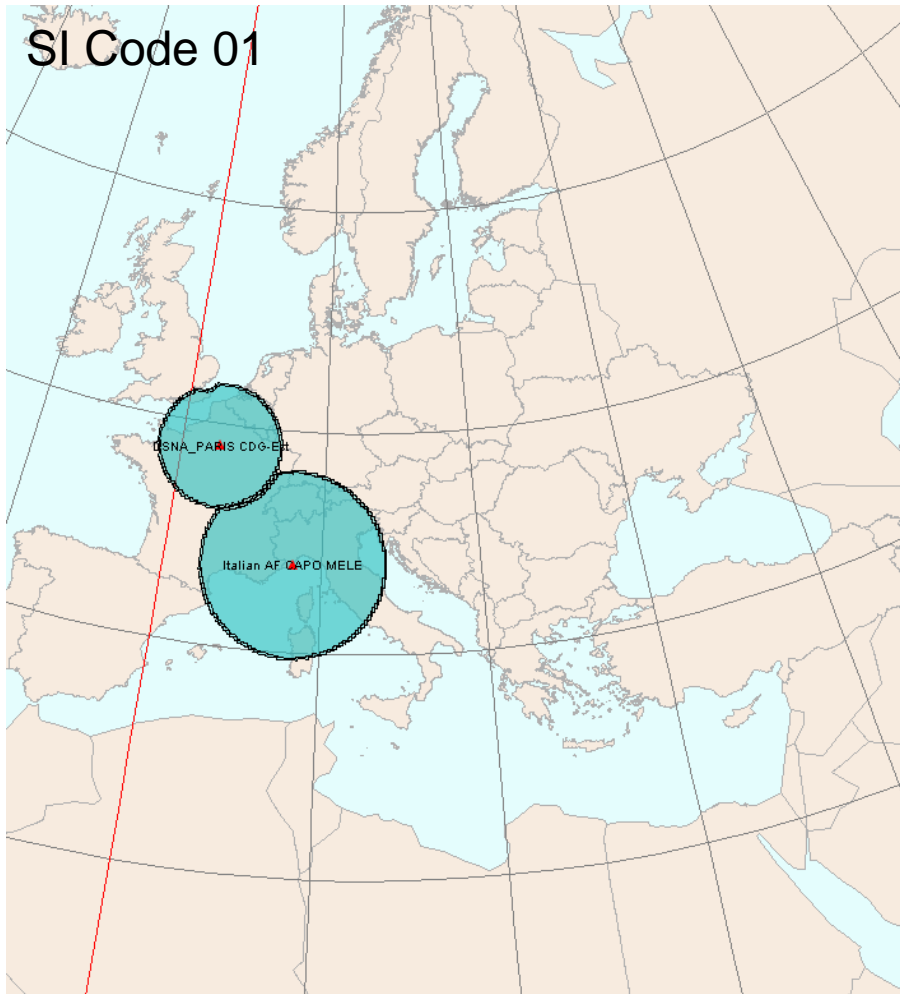


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II Code 01 – Cycle 30 – Surveillance and Lockout Coverage

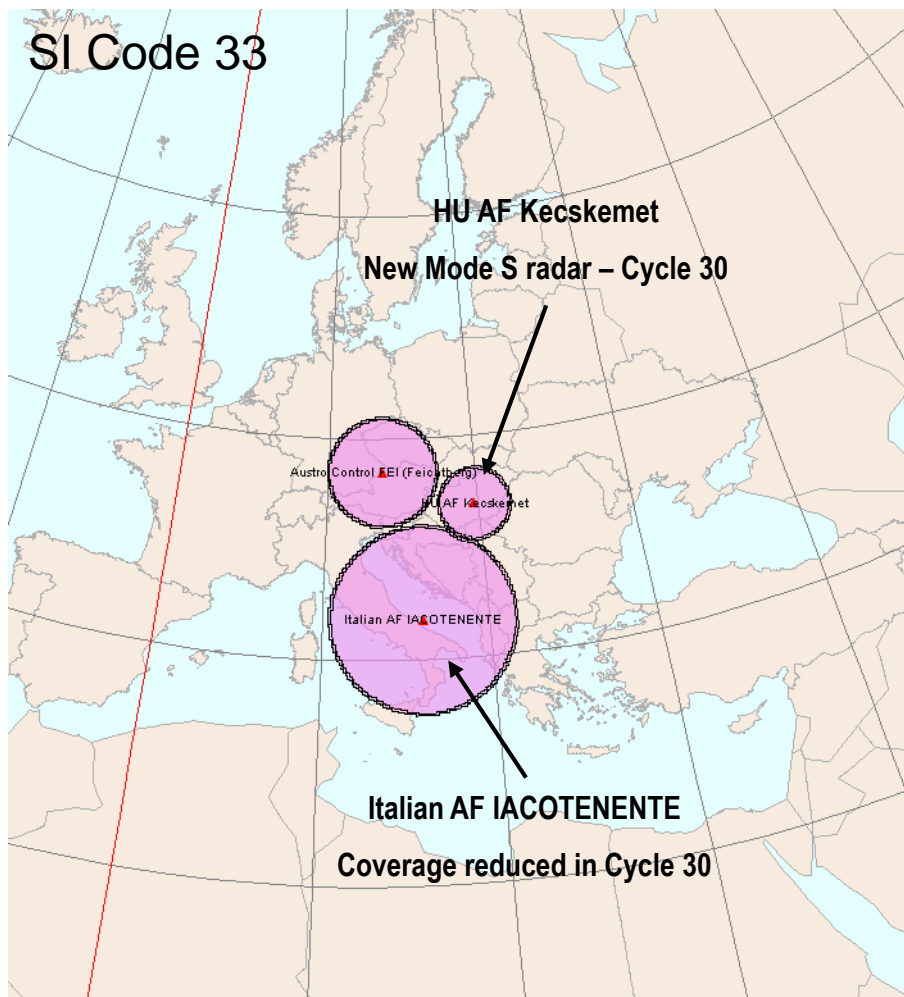


SI Code 01 and SI Code 17 Cycle 30 – Surveillance and Lockout Coverage

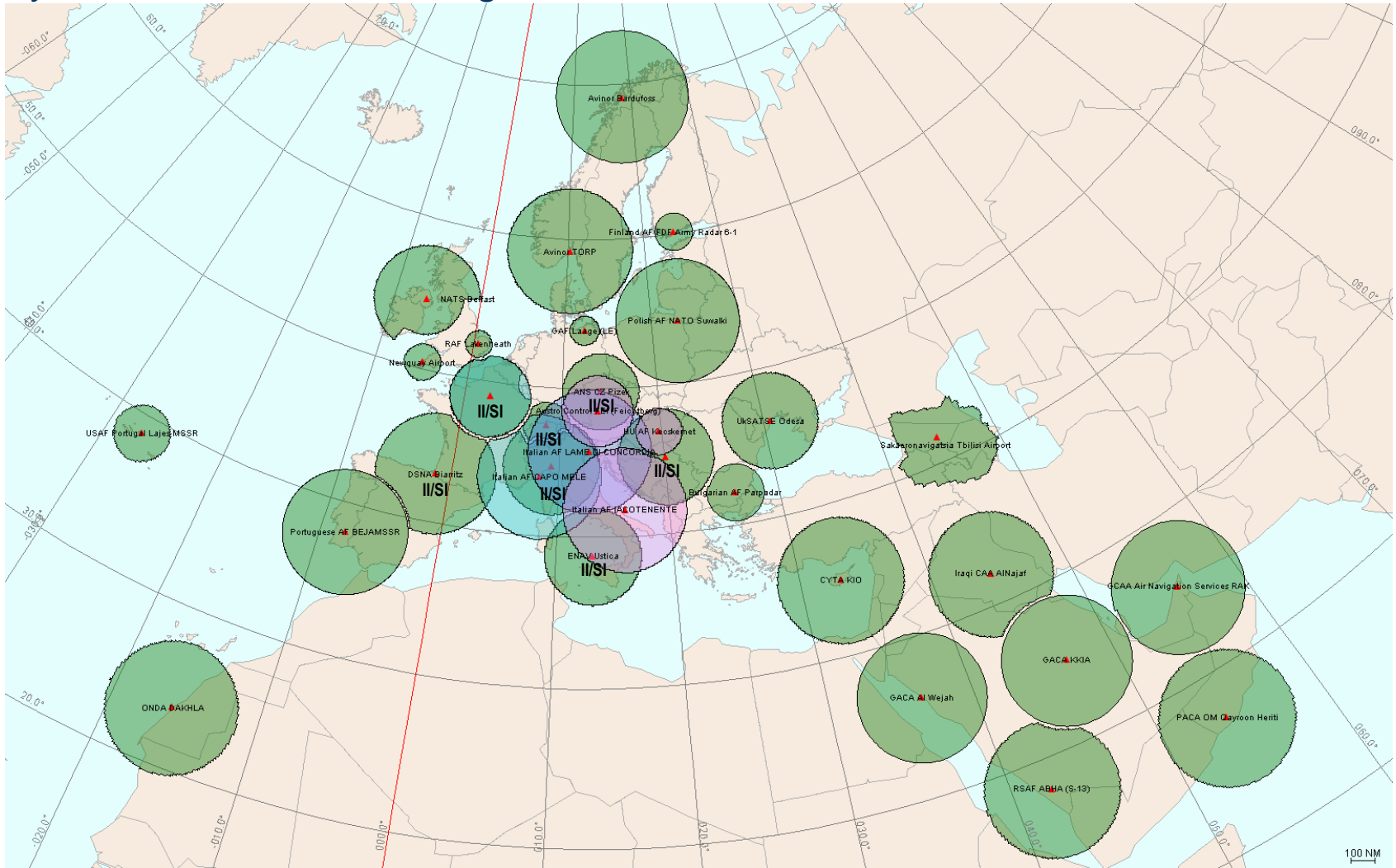


SI Code 33

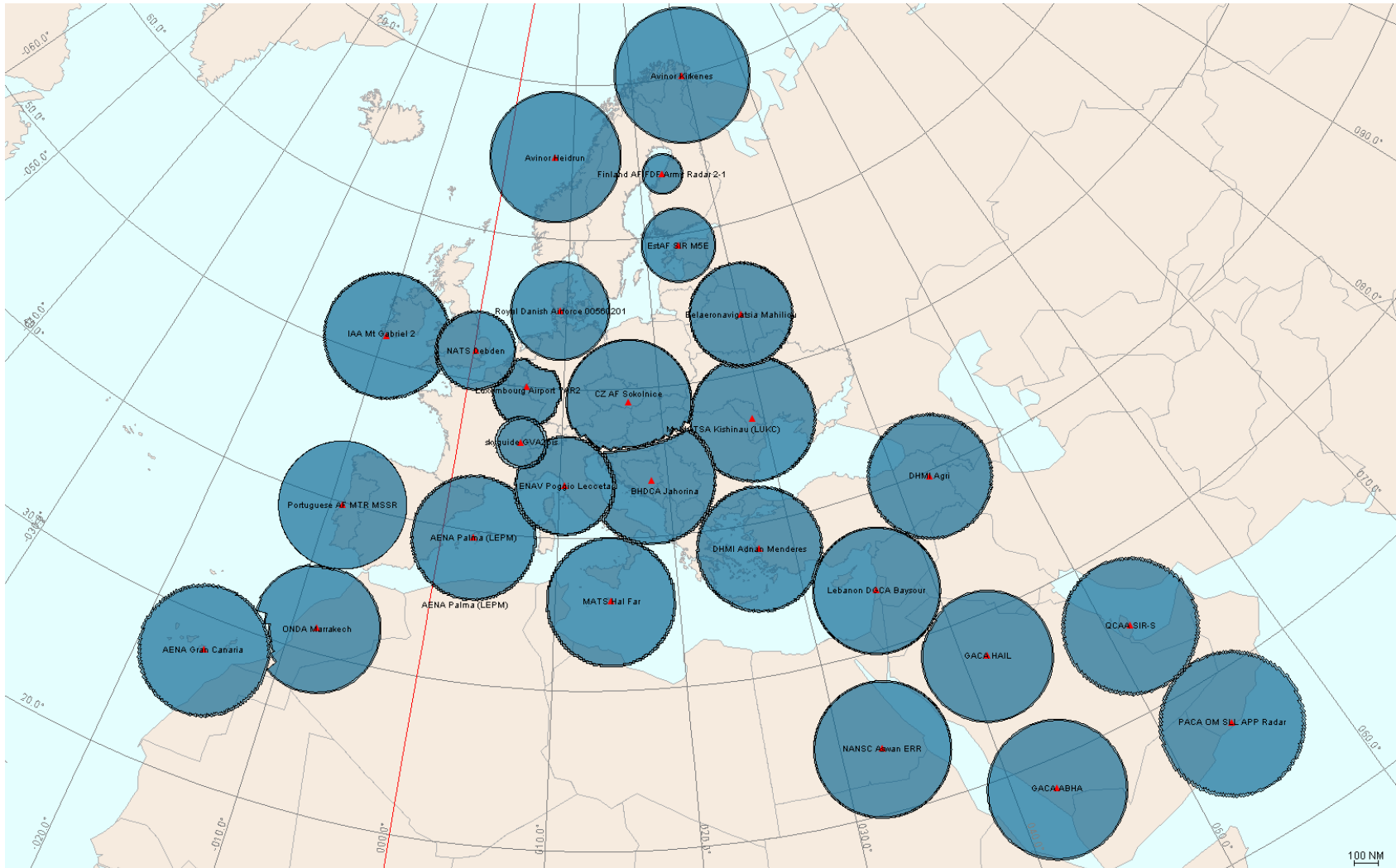
Cycle 30 – Surveillance and Lockout Coverage



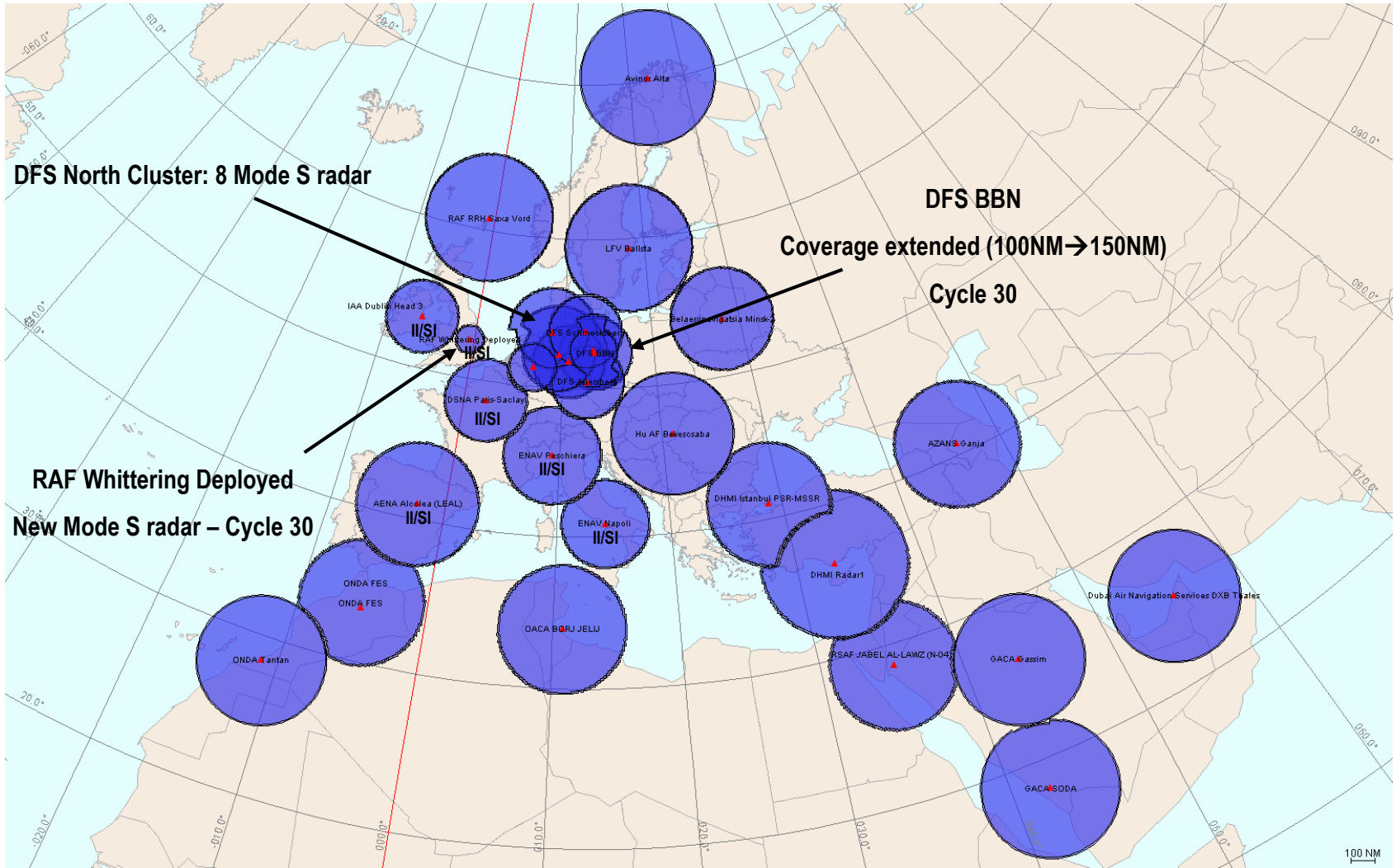
II 01 vs SI 01, SI 17 and SI 33 Cycle 30 – Lockout Coverage



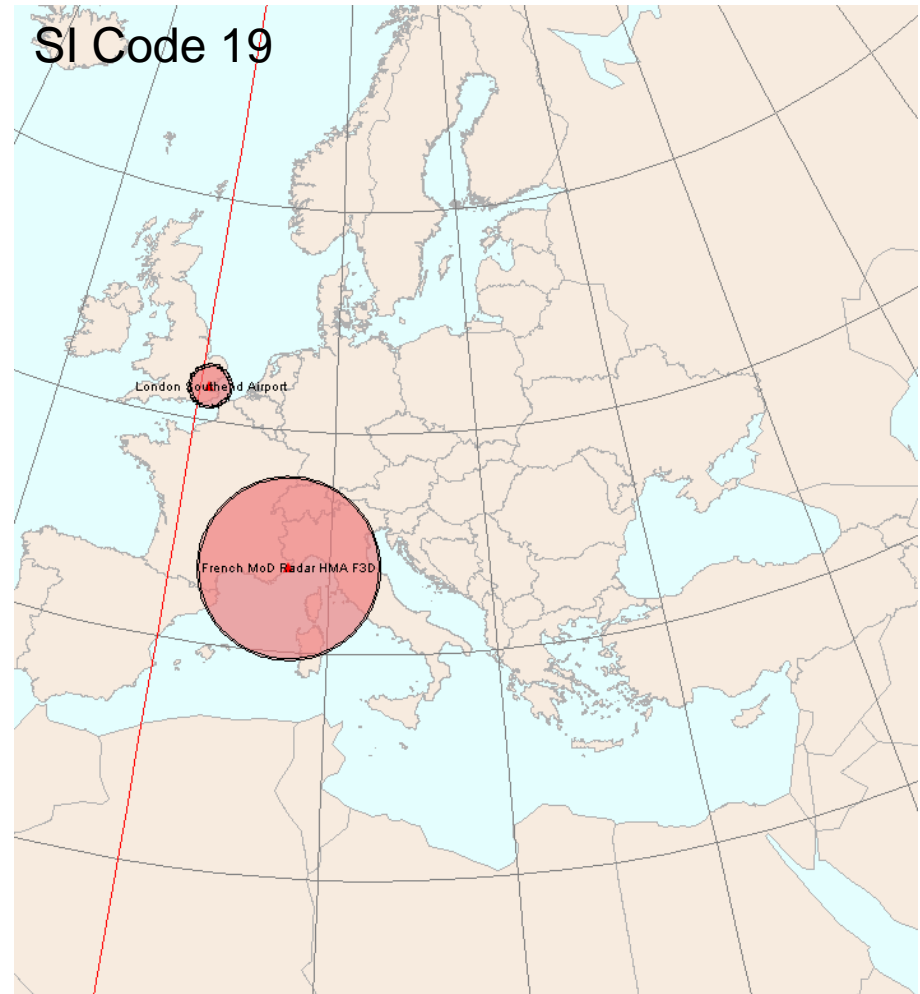
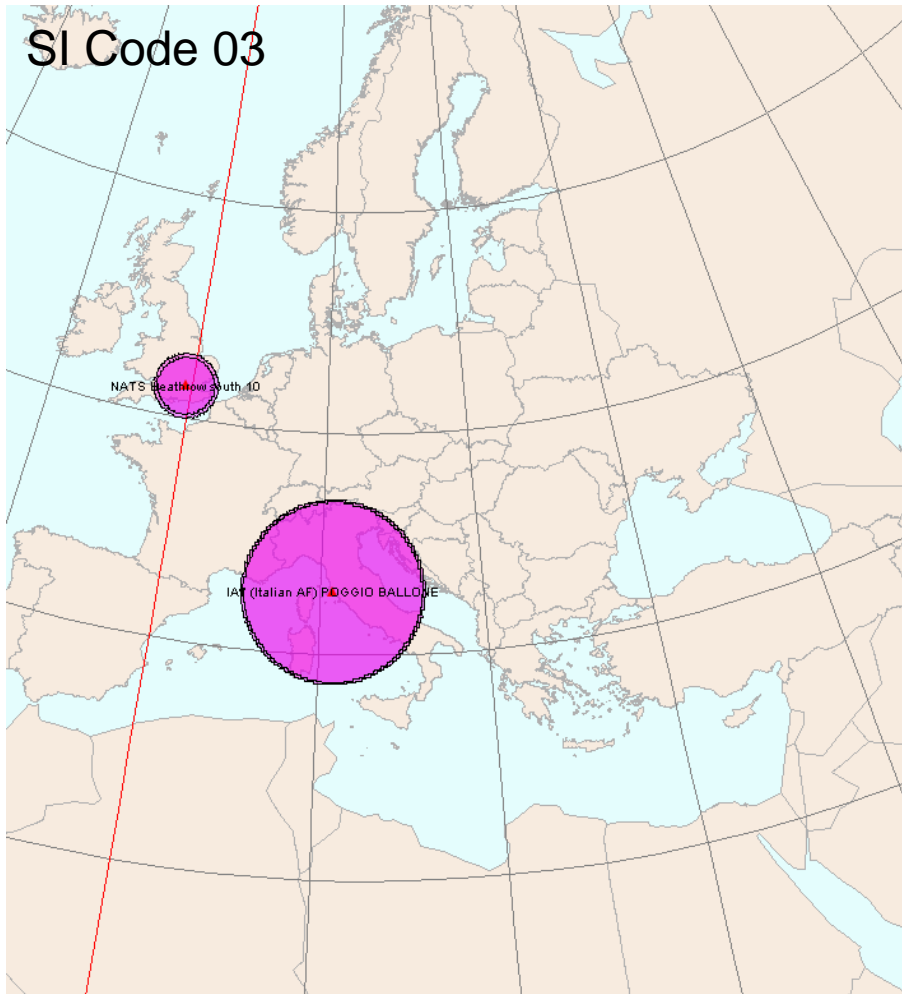
II Code 02 – Cycle 30 – Surveillance and Lockout Coverage



II Code 03 – Cycle 30 – Surveillance and Lockout Coverage

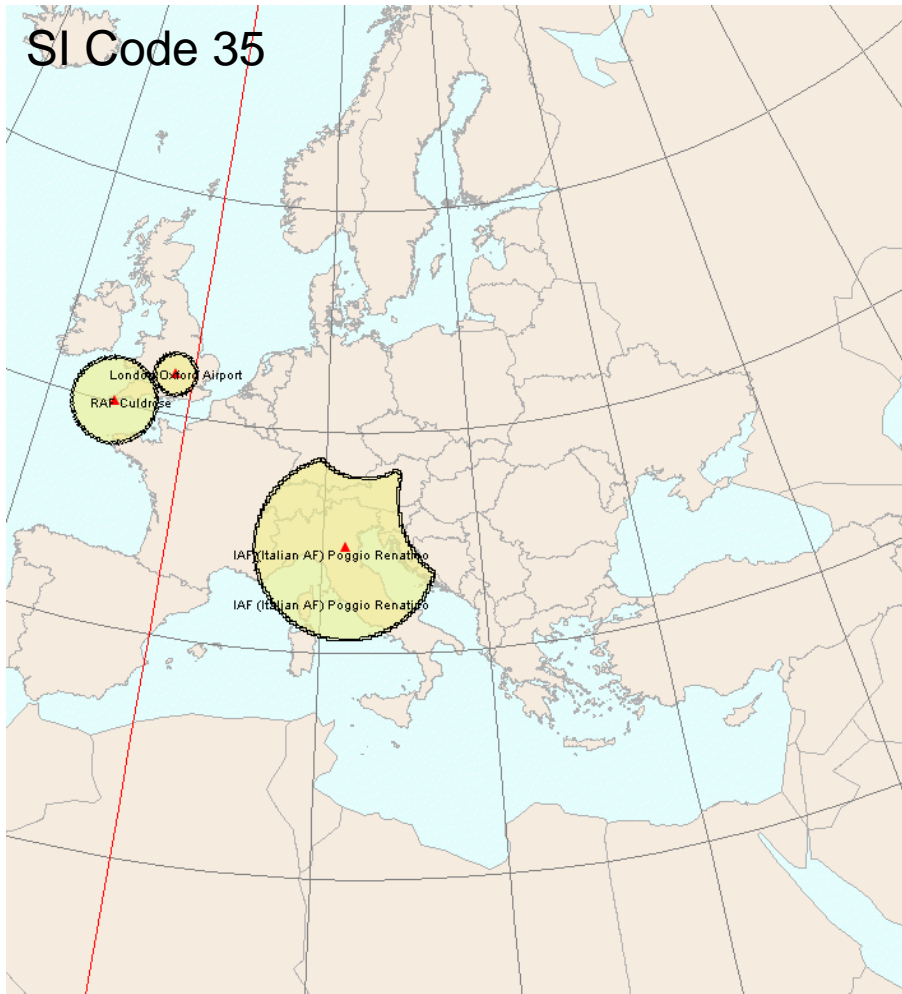


SI Code 03 and SI Code 19 Cycle 30 – Surveillance and Lockout Coverage

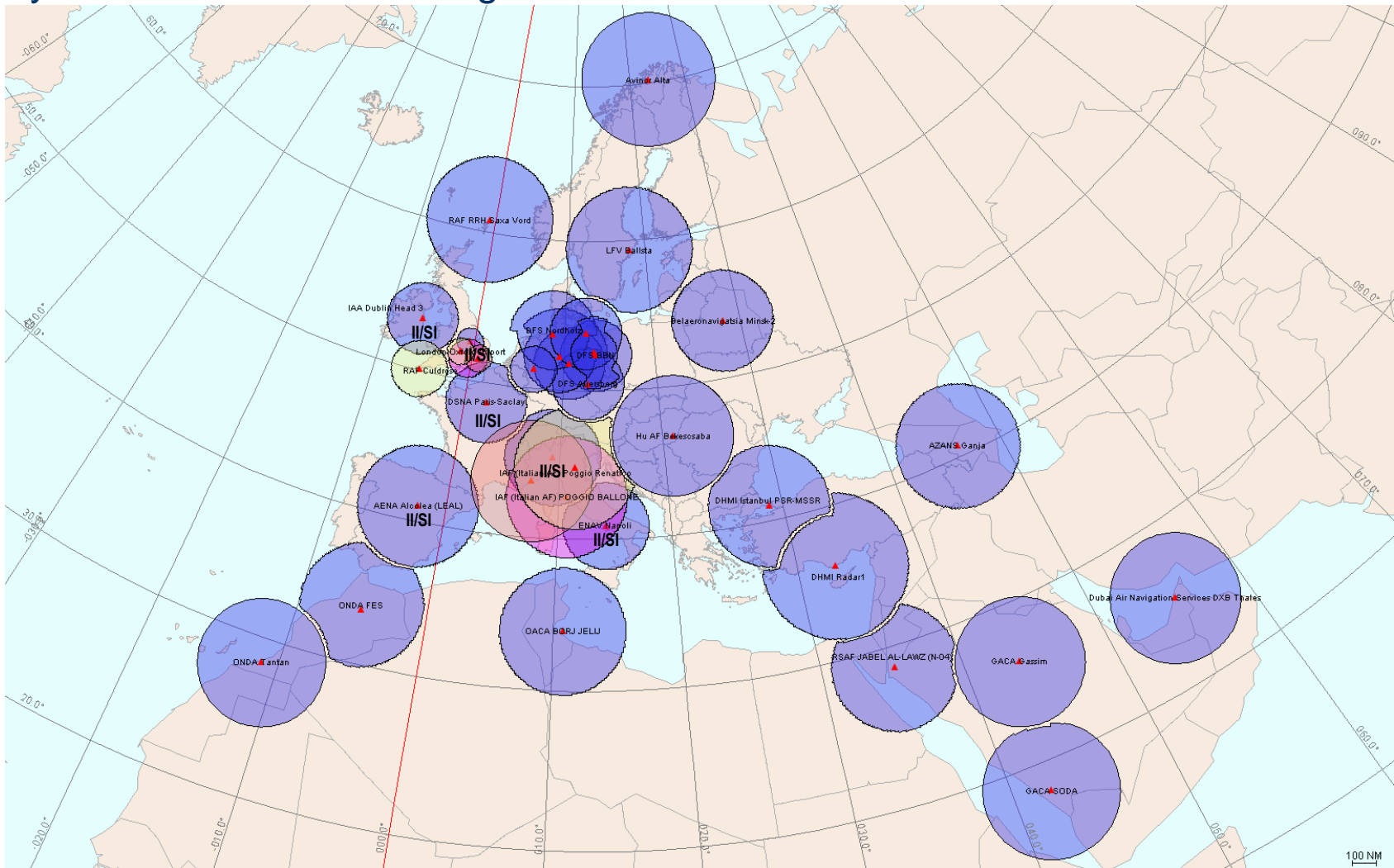


SI Code 35

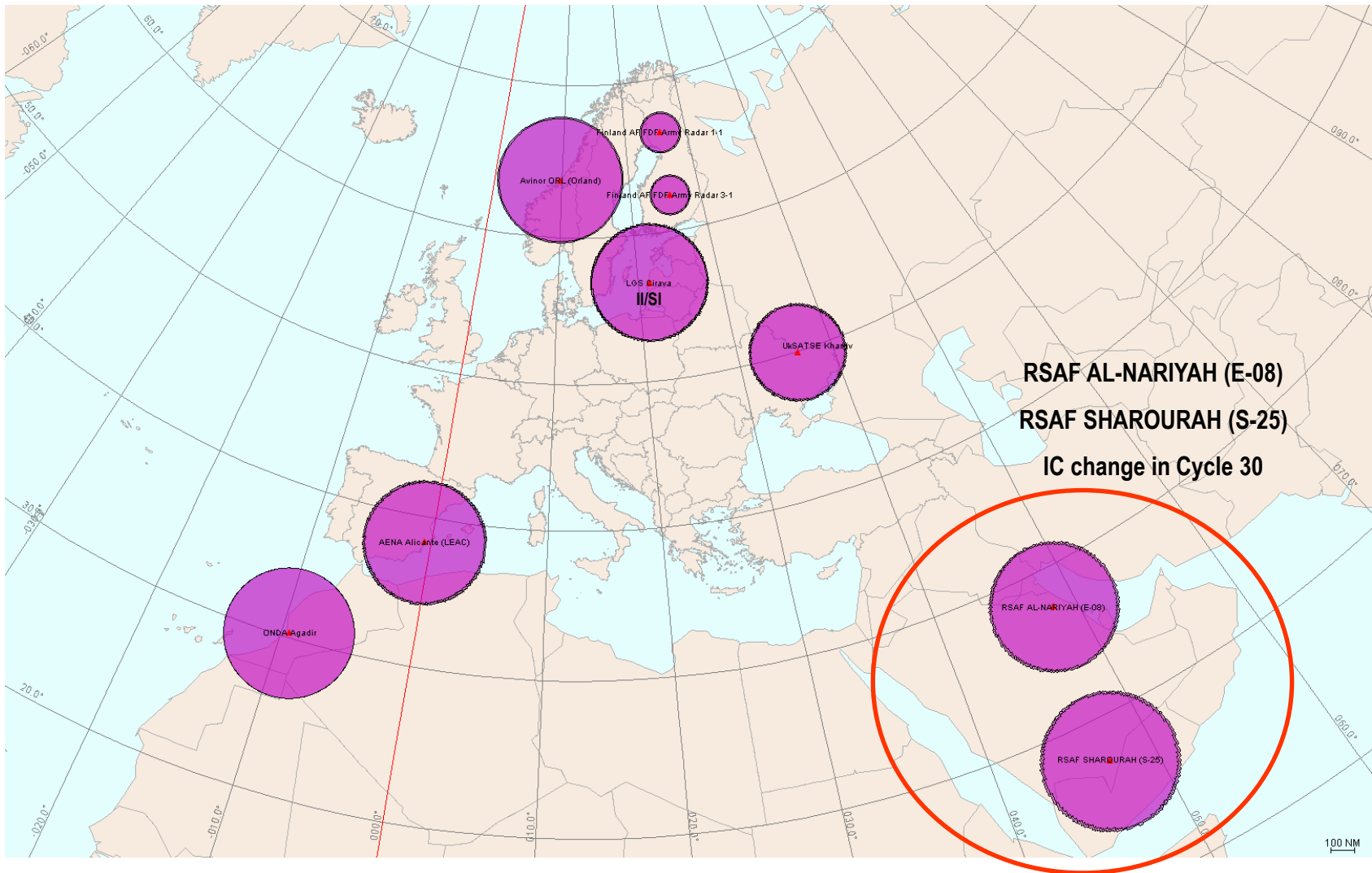
Cycle 30 – Surveillance and Lockout Coverage



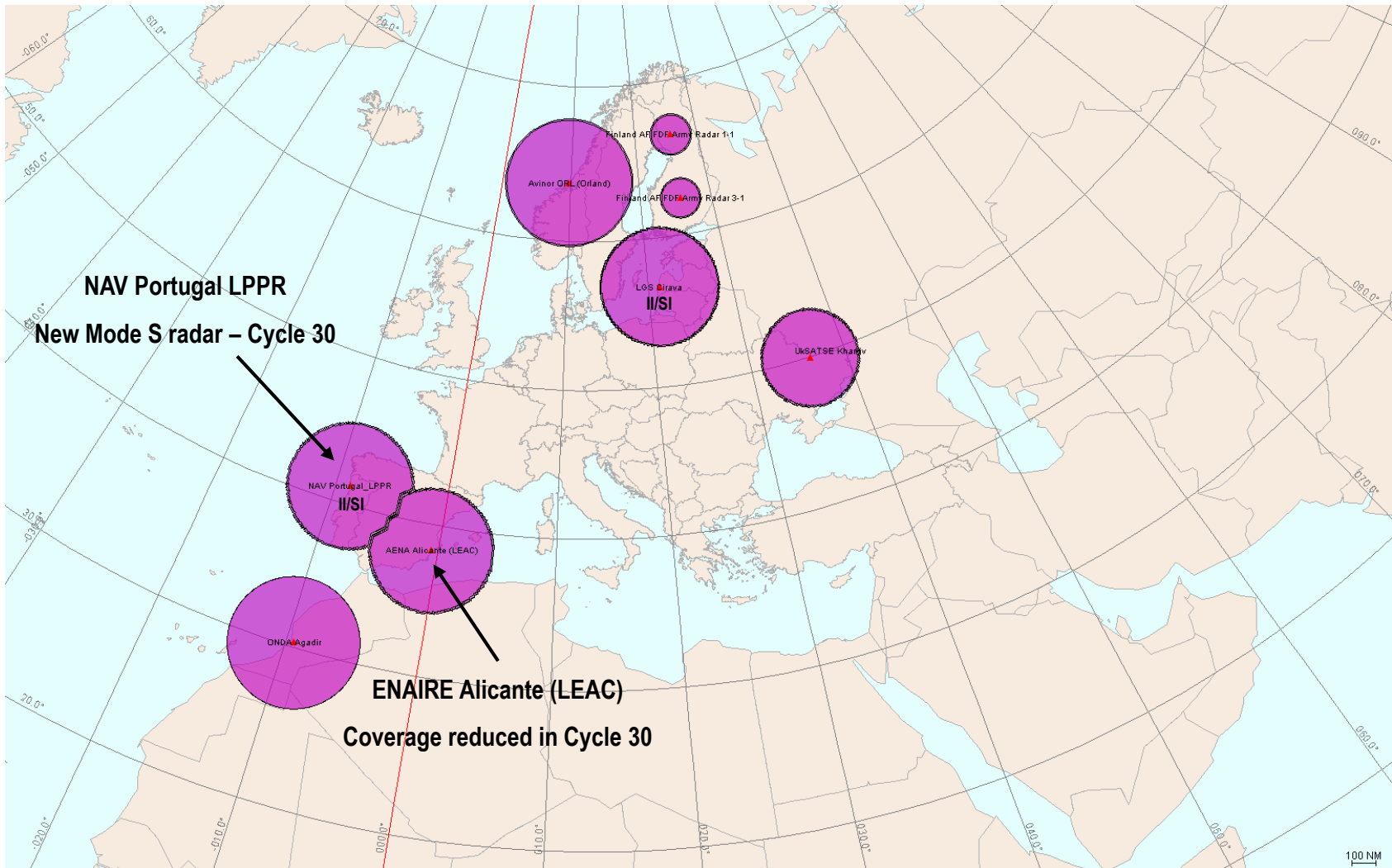
II 03 vs SI 03, SI 19 and SI 35 Cycle 30 – Lockout Coverage



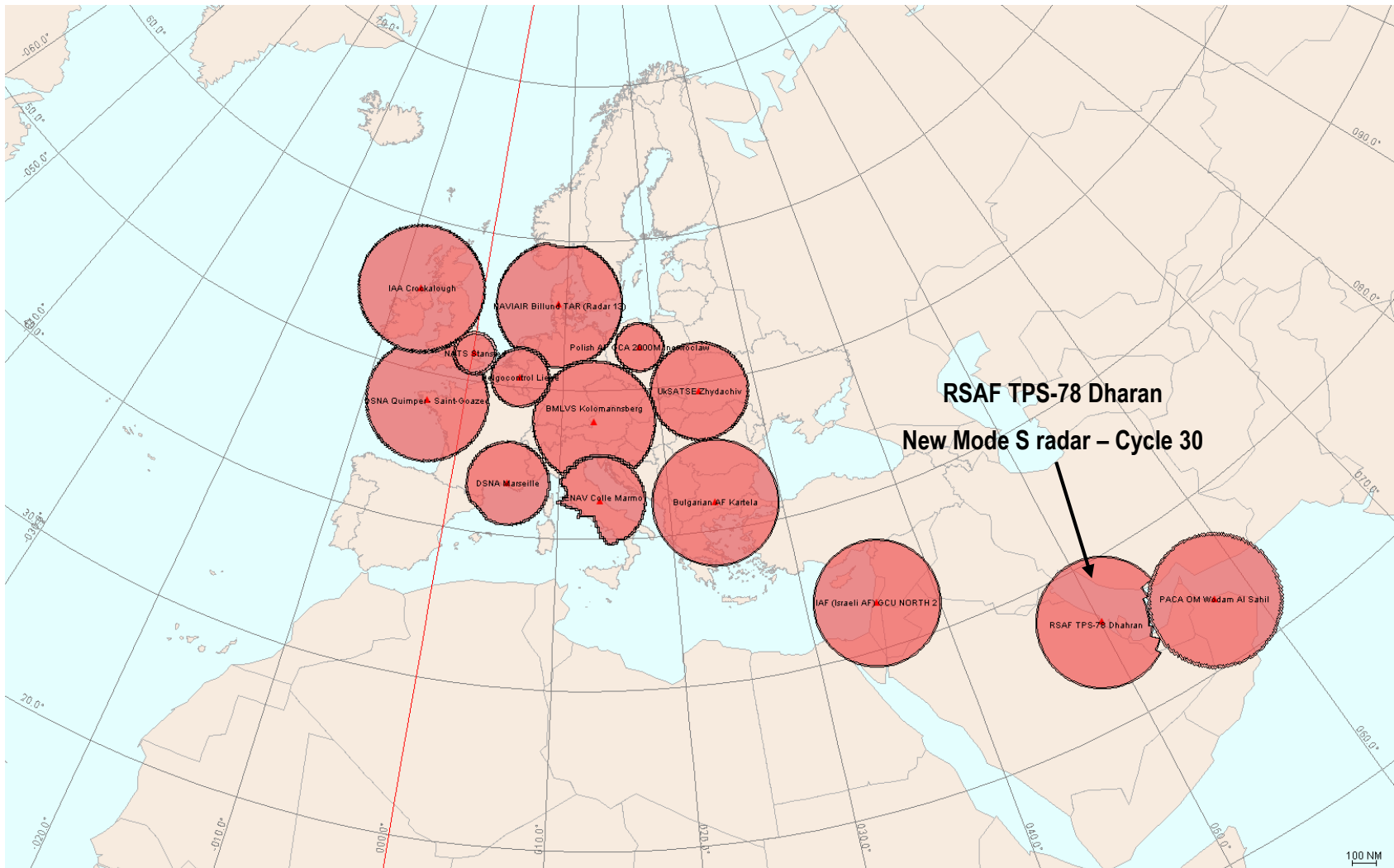
II Code 04 – Cycle 29 – Surveillance and Lockout Coverage



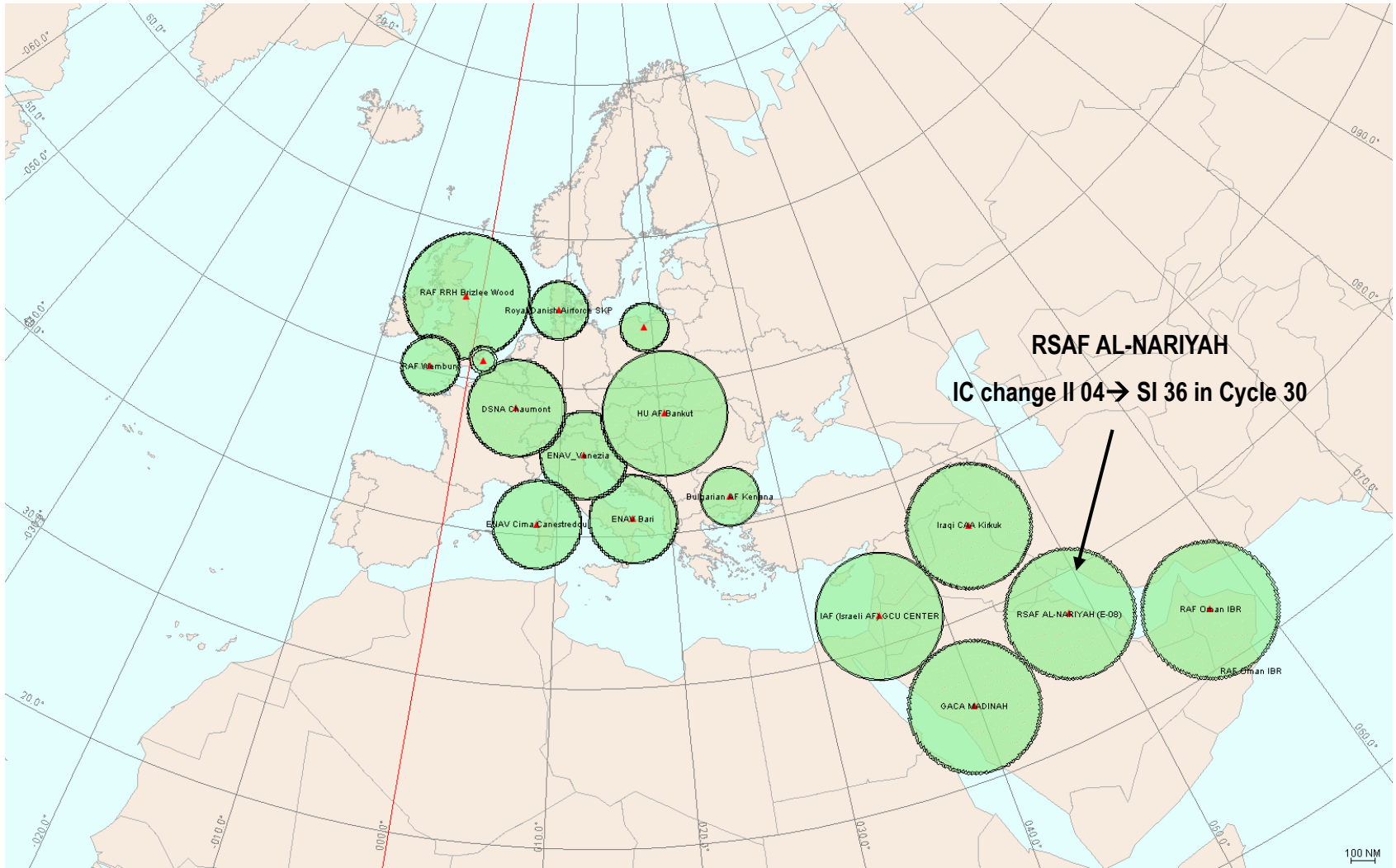
II Code 04 – Cycle 30 – Surveillance and Lockout Coverage



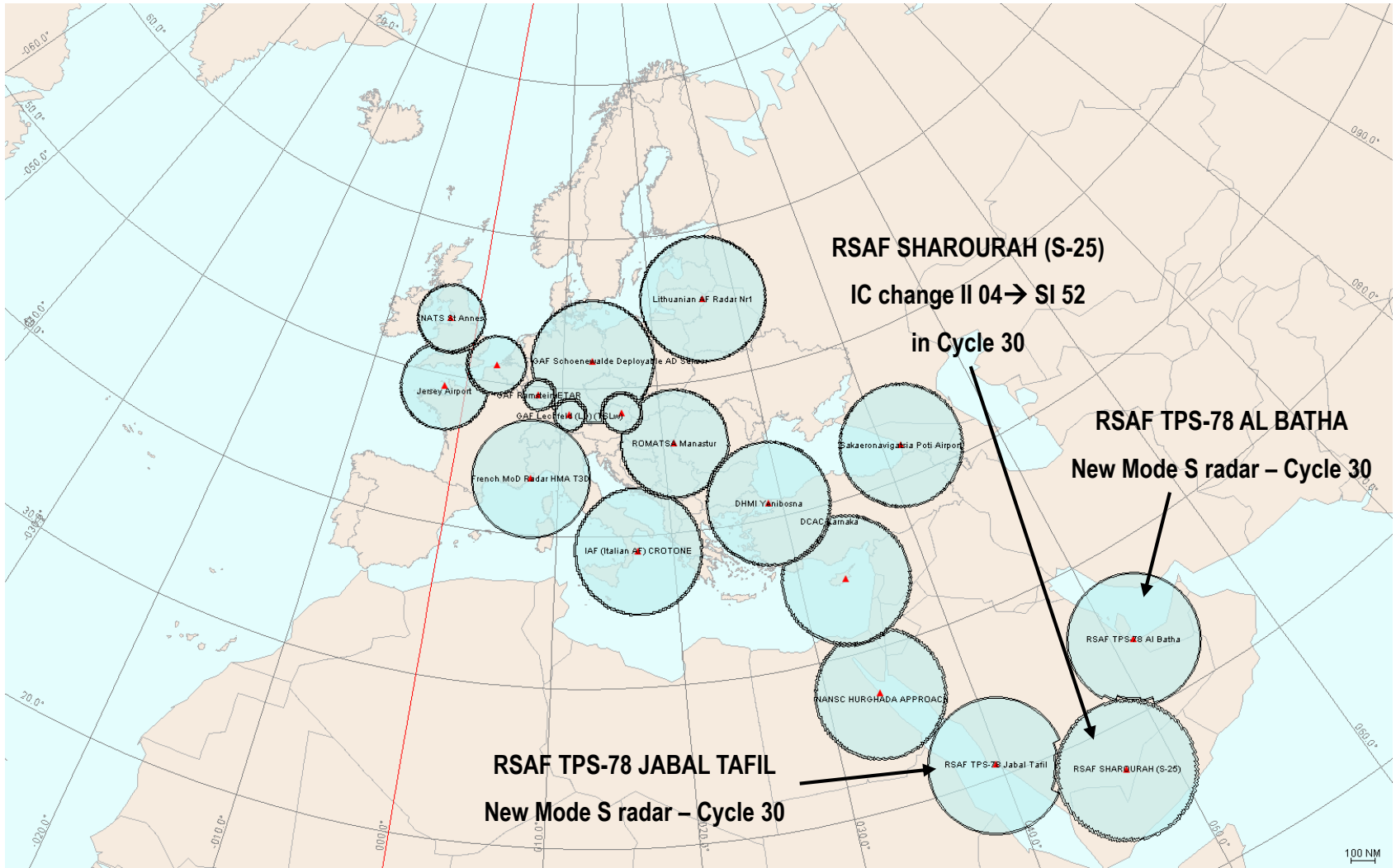
SI Code 04 – Cycle 30 – Surveillance and Lockout Coverage



SI Code 36 – Cycle 30 – Surveillance and Lockout Coverage



SI Code 52 – Cycle 30 – Surveillance and Lockout Coverage



RSF SHAROURAH (S-25)
IC change II 04 → SI 52
in Cycle 30

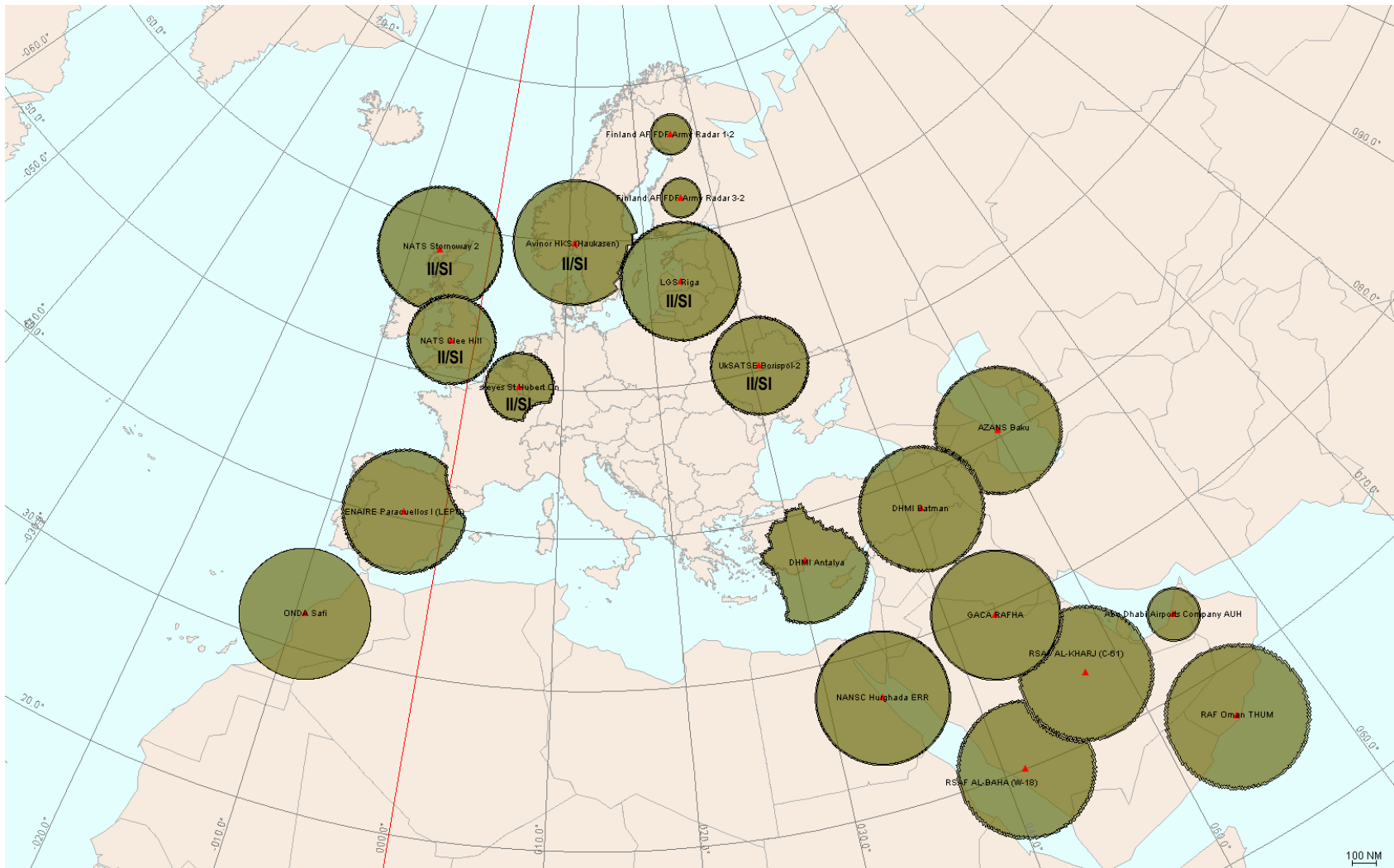
RSF TPS-78 AL BATHA
New Mode S radar – Cycle 30

RSF TPS-78 JABAL TAFIL
New Mode S radar – Cycle 30

II 04 vs SI 04, SI 20, SI36 and SI 52 Cycle 29 – Lockout Coverage

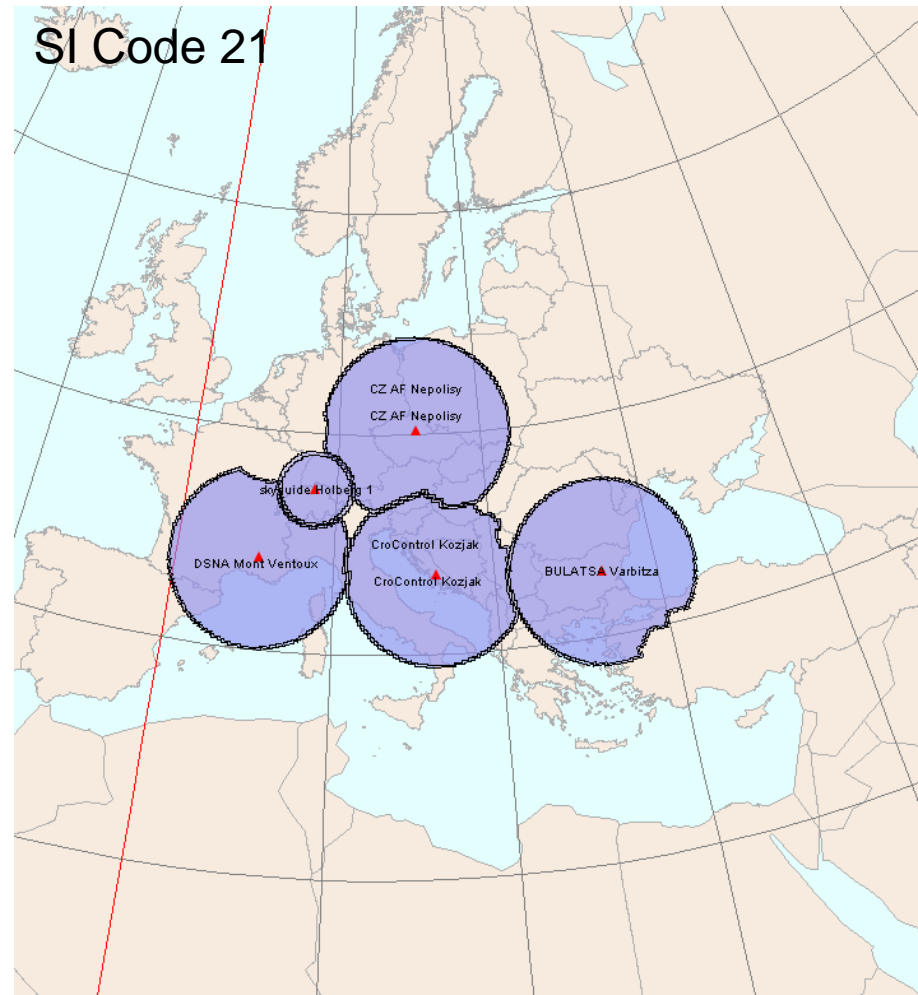
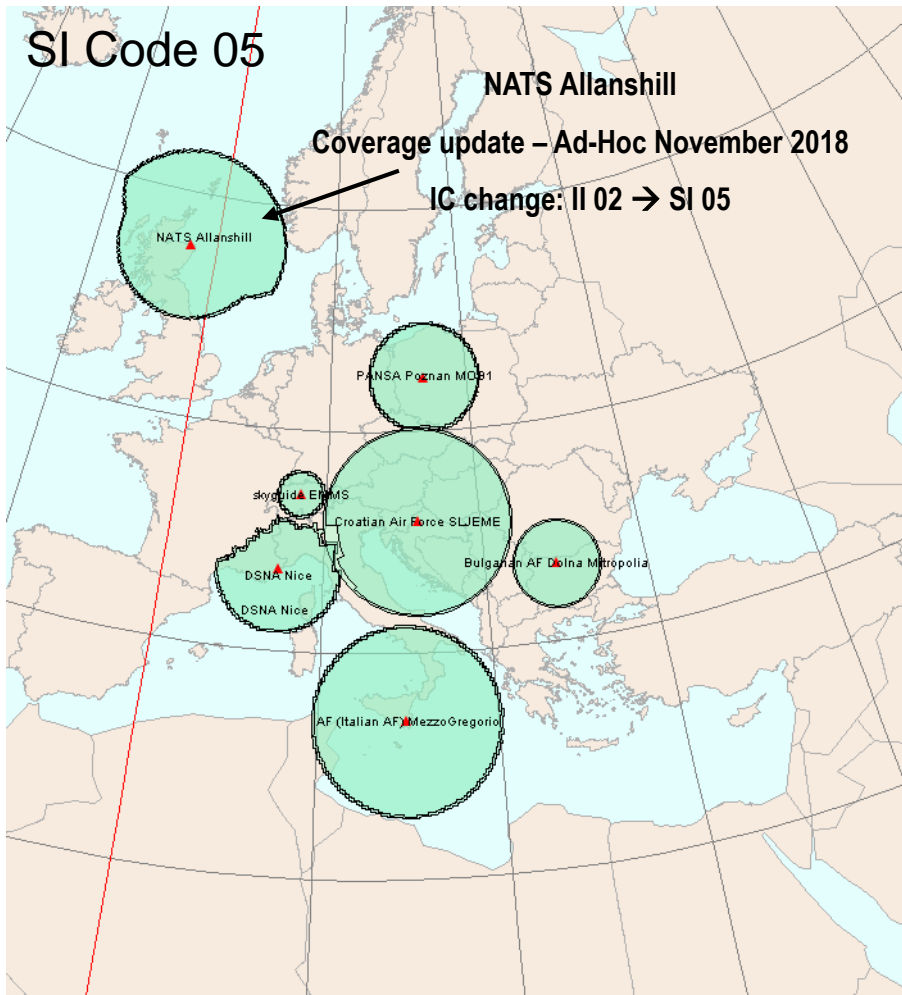


II Code 05 – Cycle 30 – Surveillance and Lockout Coverage



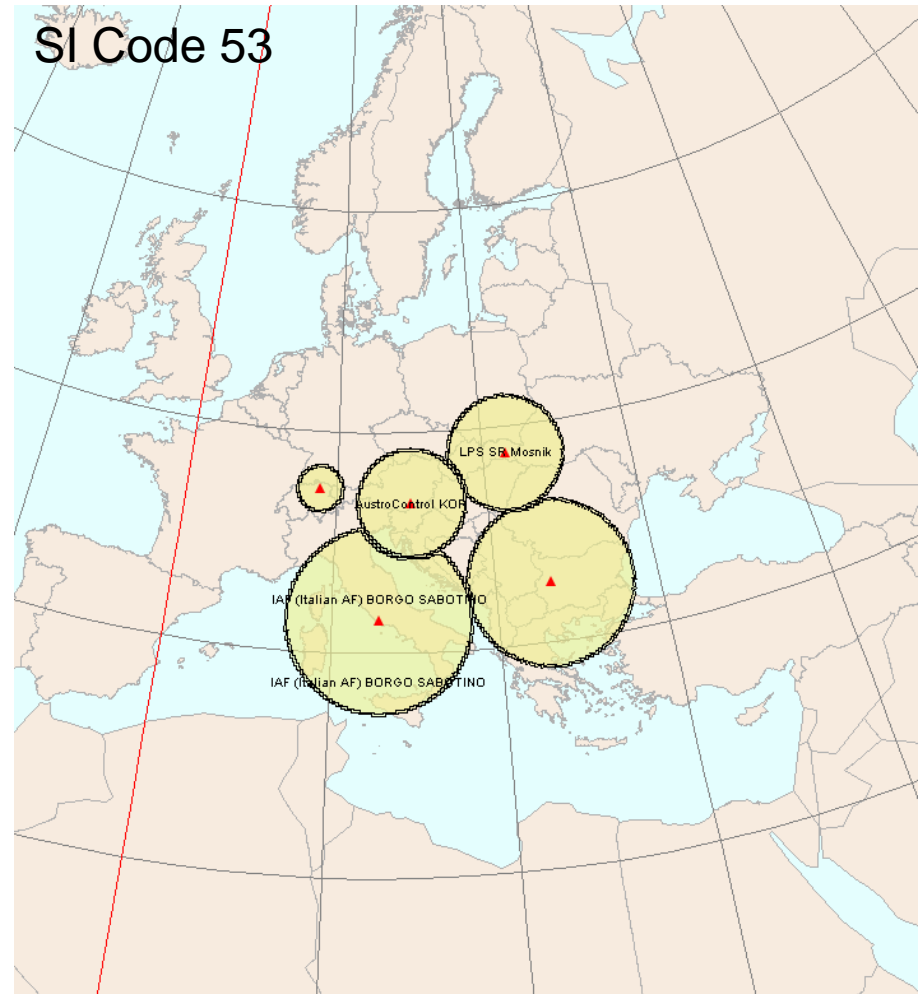
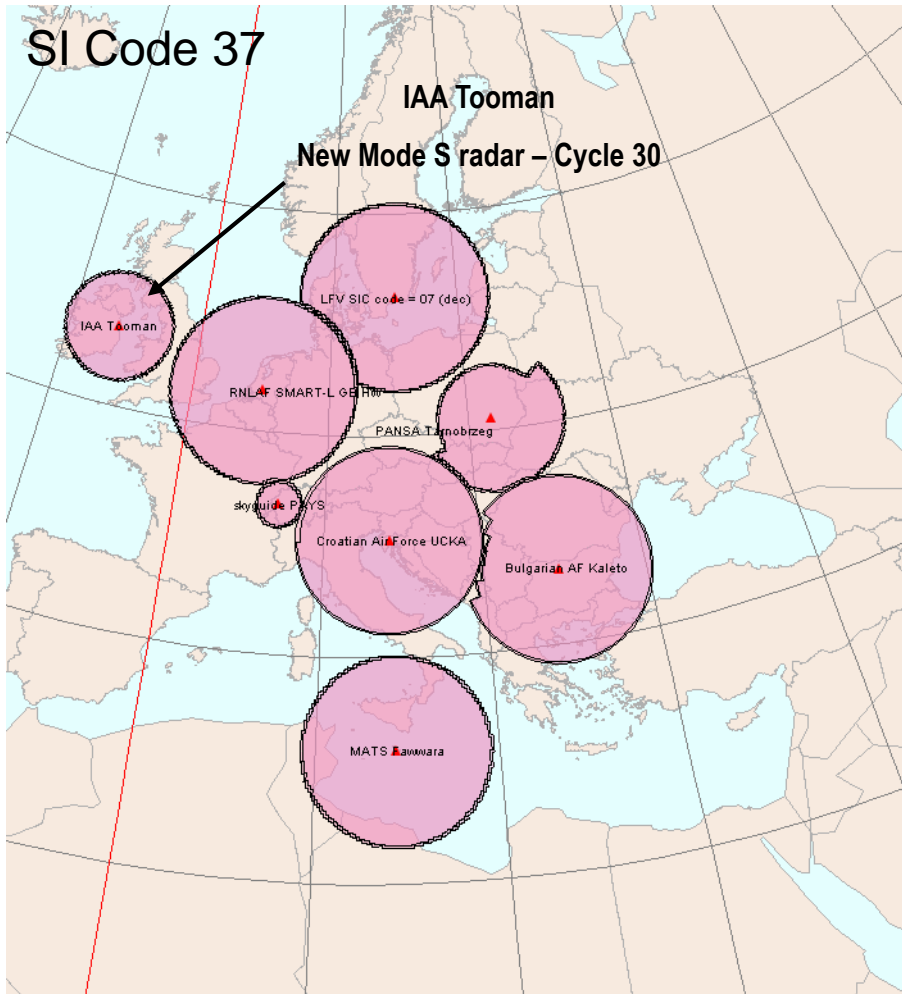
SI Code 05 and SI Code 21

Cycle 30 – Surveillance and Lockout Coverage

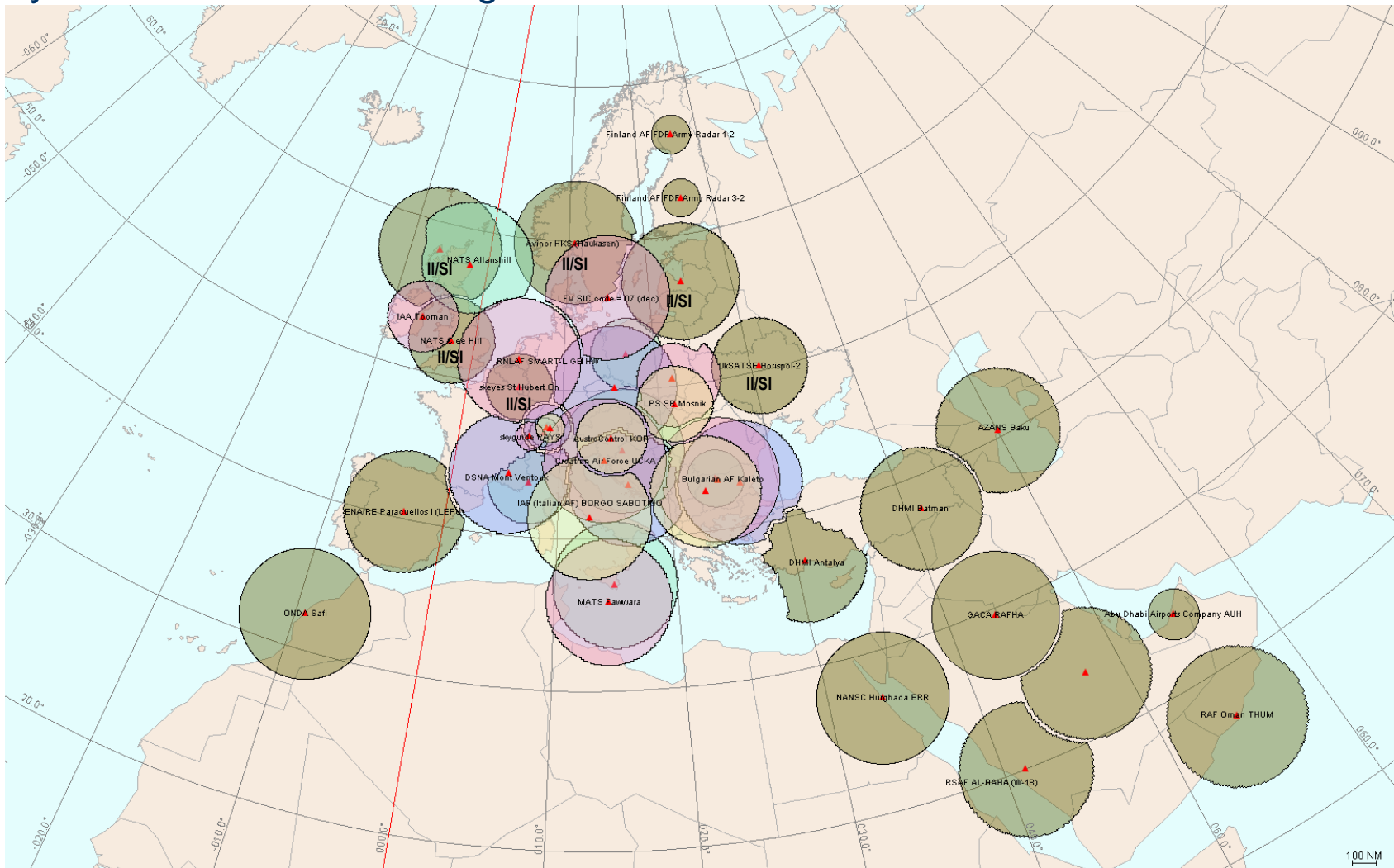


SI Code 37 and SI Code 53

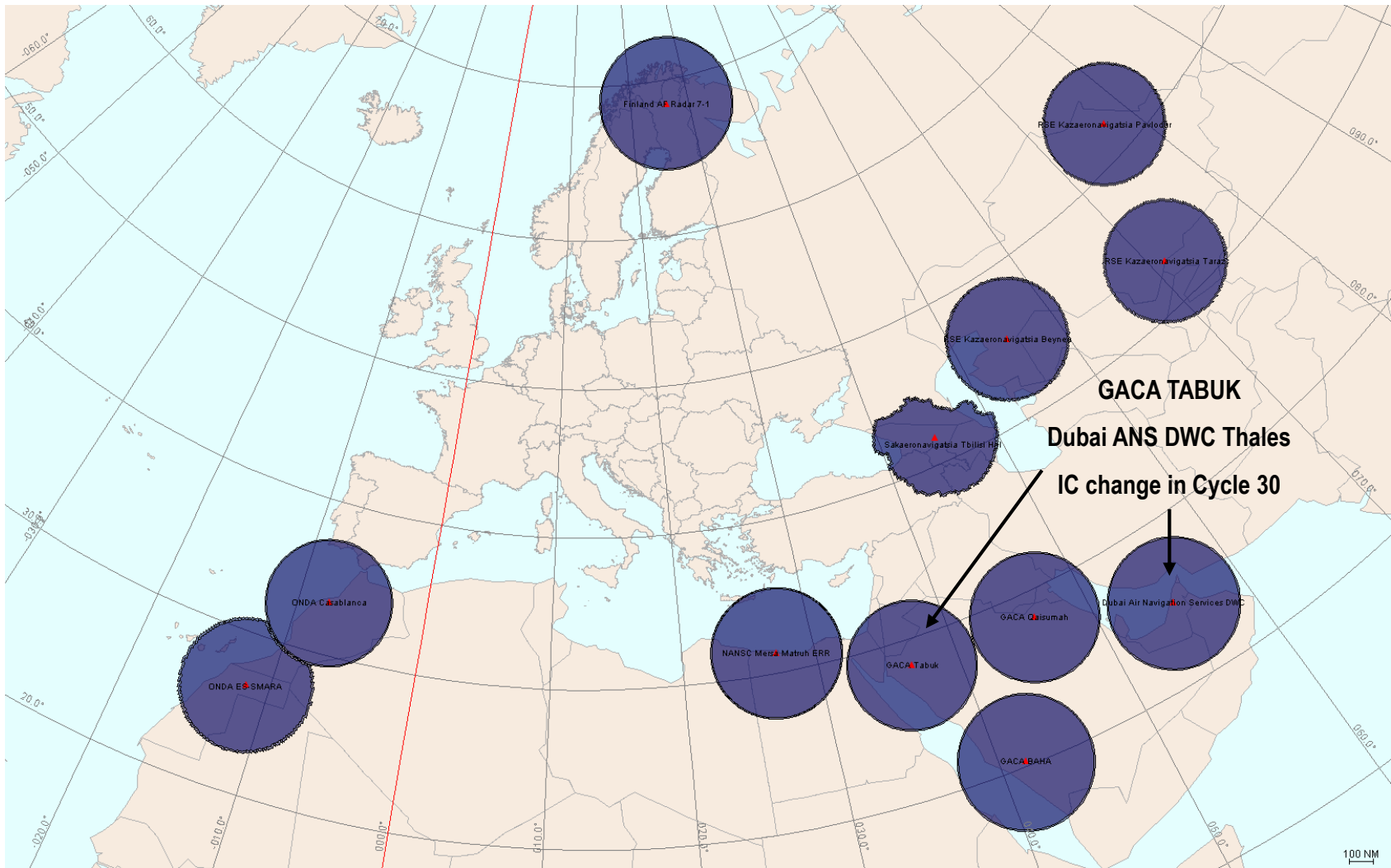
Cycle 30 – Surveillance and Lockout Coverage



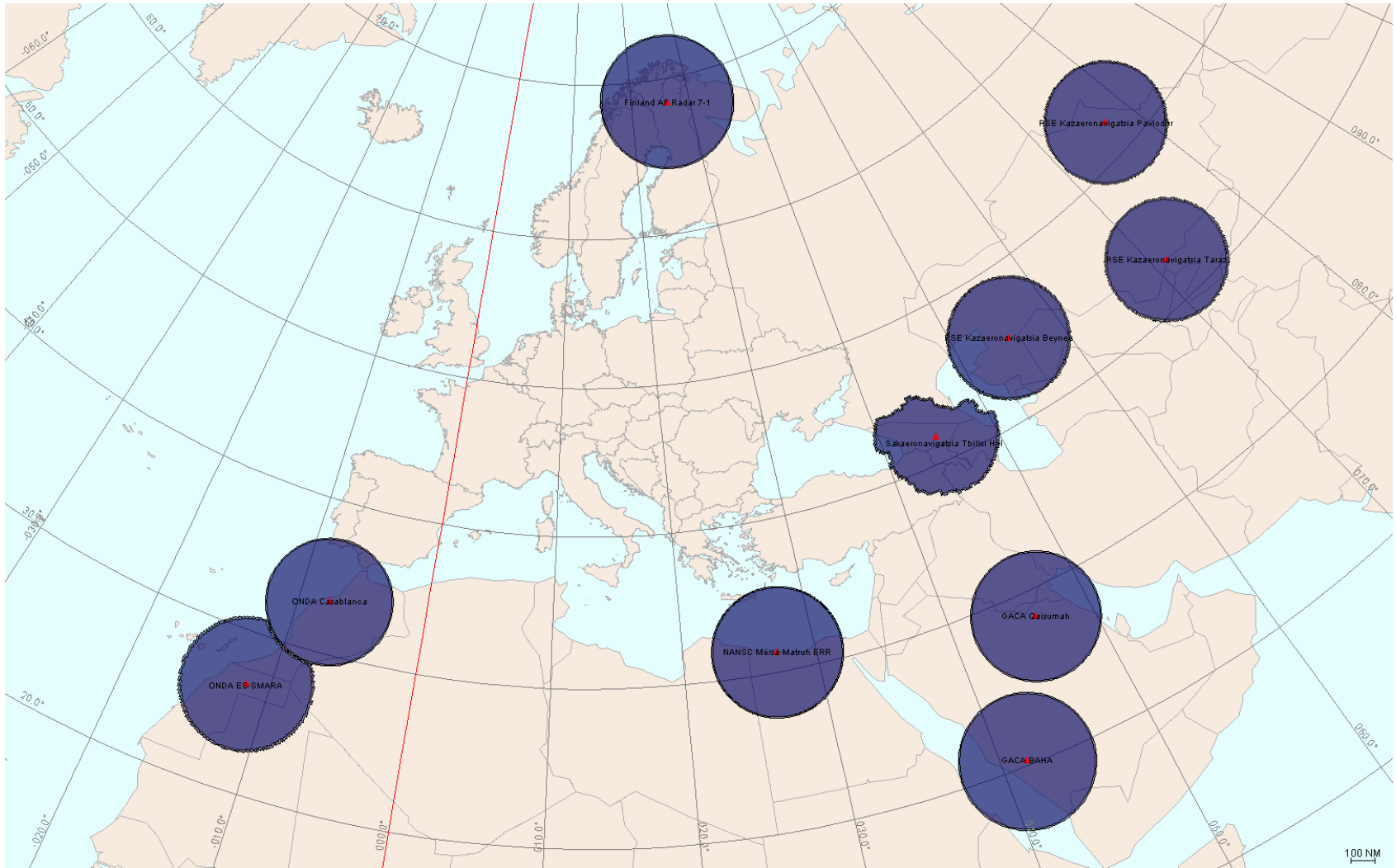
II 05 vs SI 05, SI 21, SI37 and SI 53 Cycle 30 – Lockout Coverage



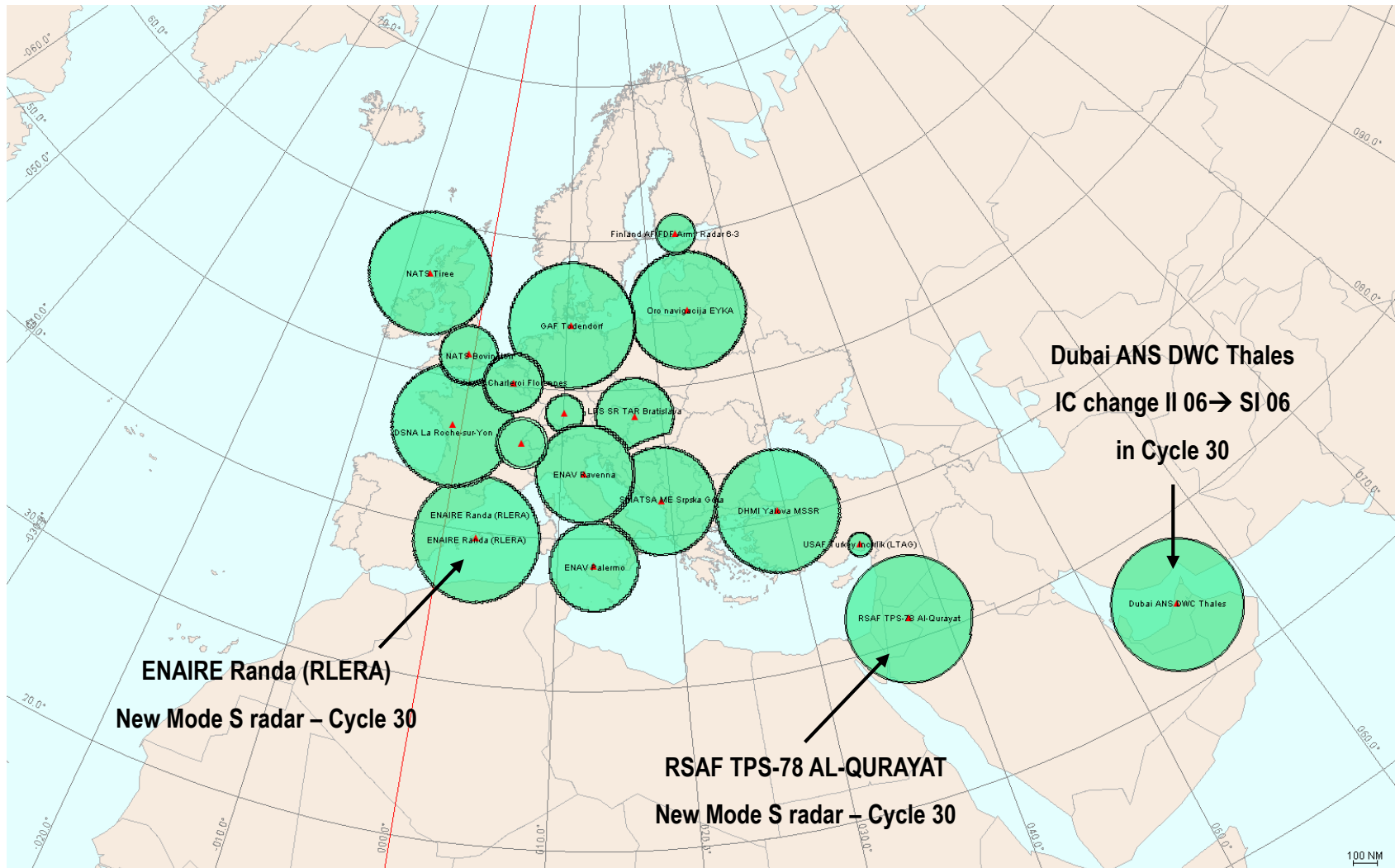
II Code 06 – Cycle 29 – Surveillance and Lockout Coverage



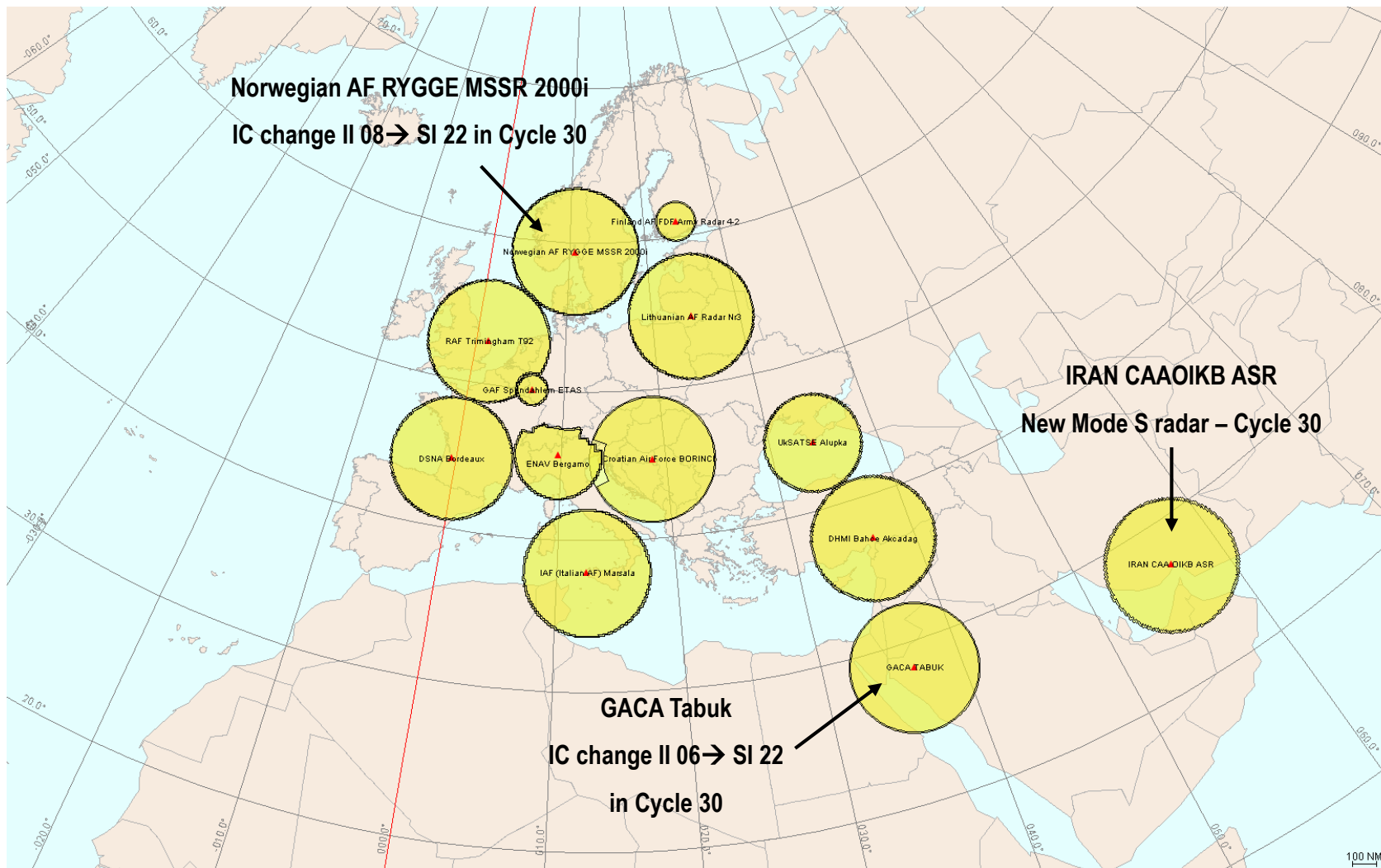
II Code 06 – Cycle 30 – Surveillance and Lockout Coverage



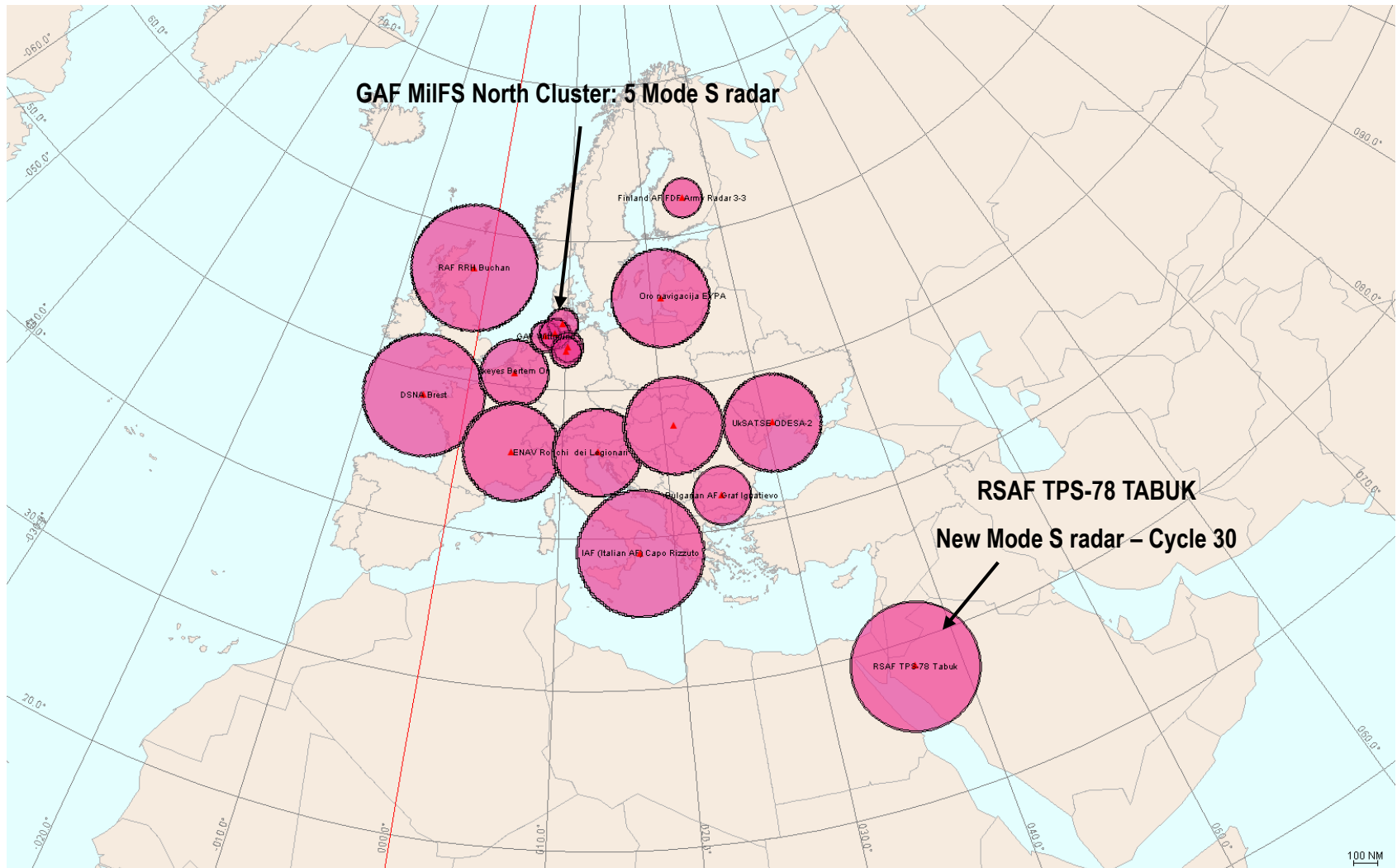
SI Code 06 – Cycle 30 – Surveillance and Lockout Coverage



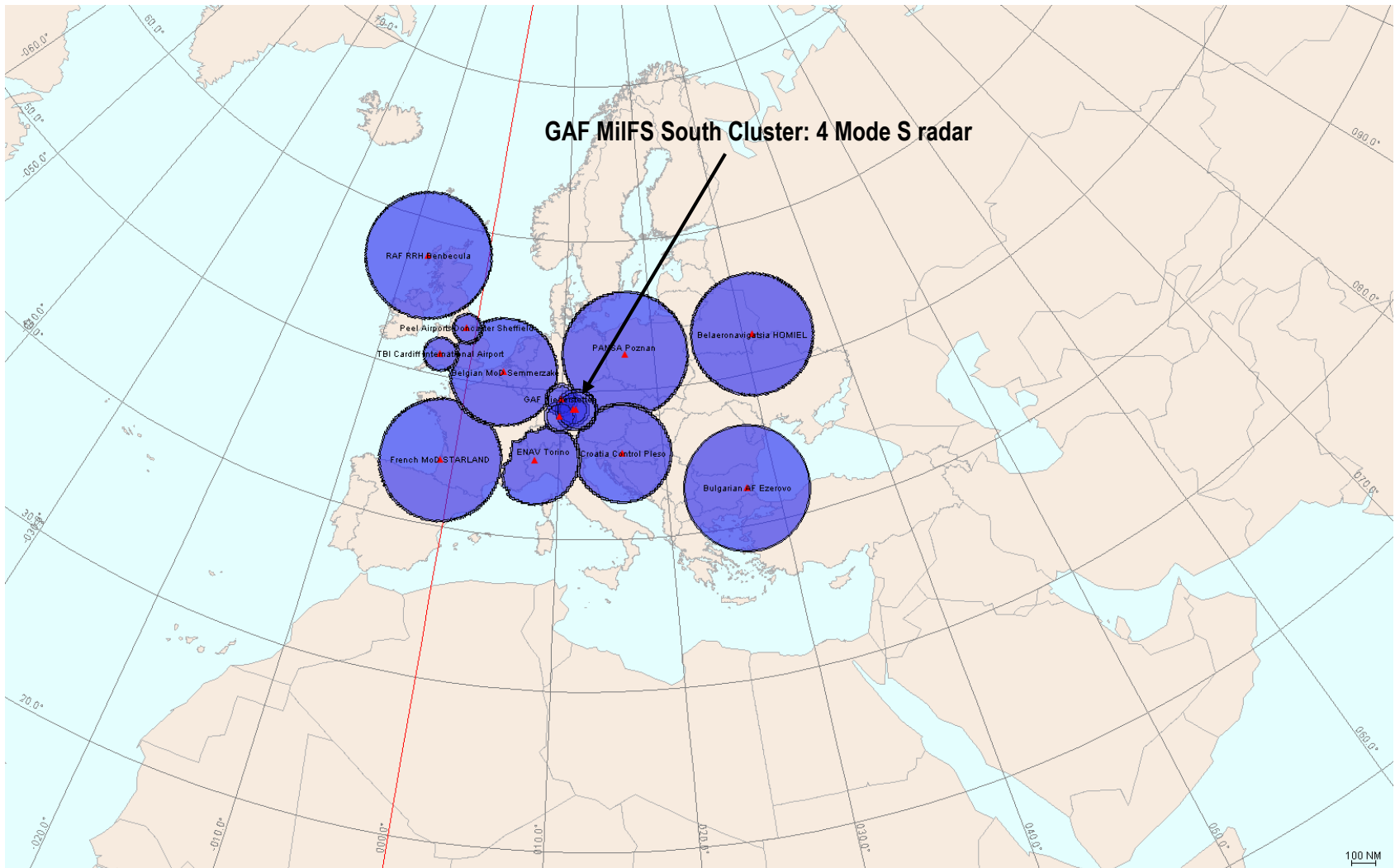
SI Code 22 – Cycle 30 – Surveillance and Lockout Coverage



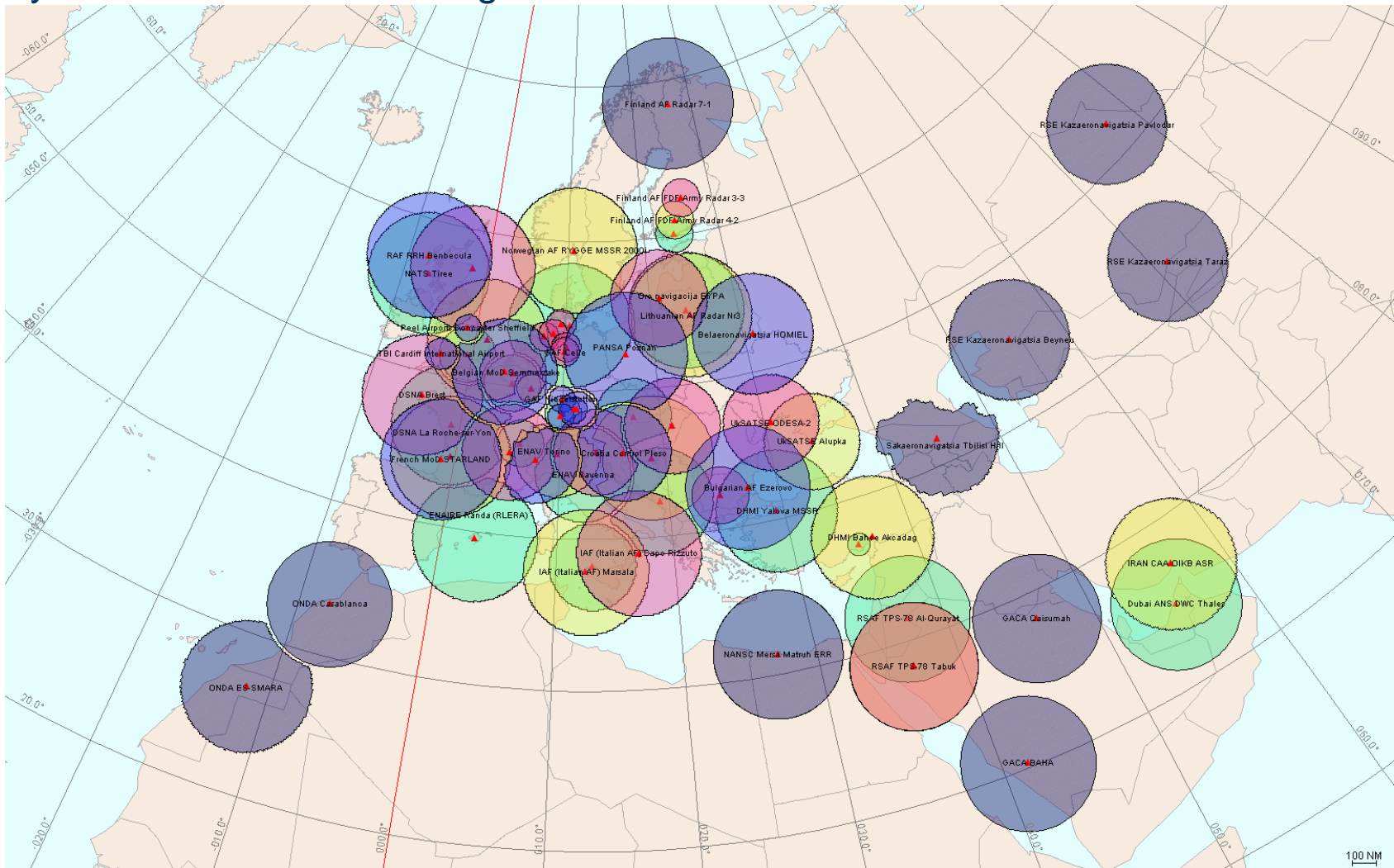
SI Code 38 – Cycle 30 – Surveillance and Lockout Coverage



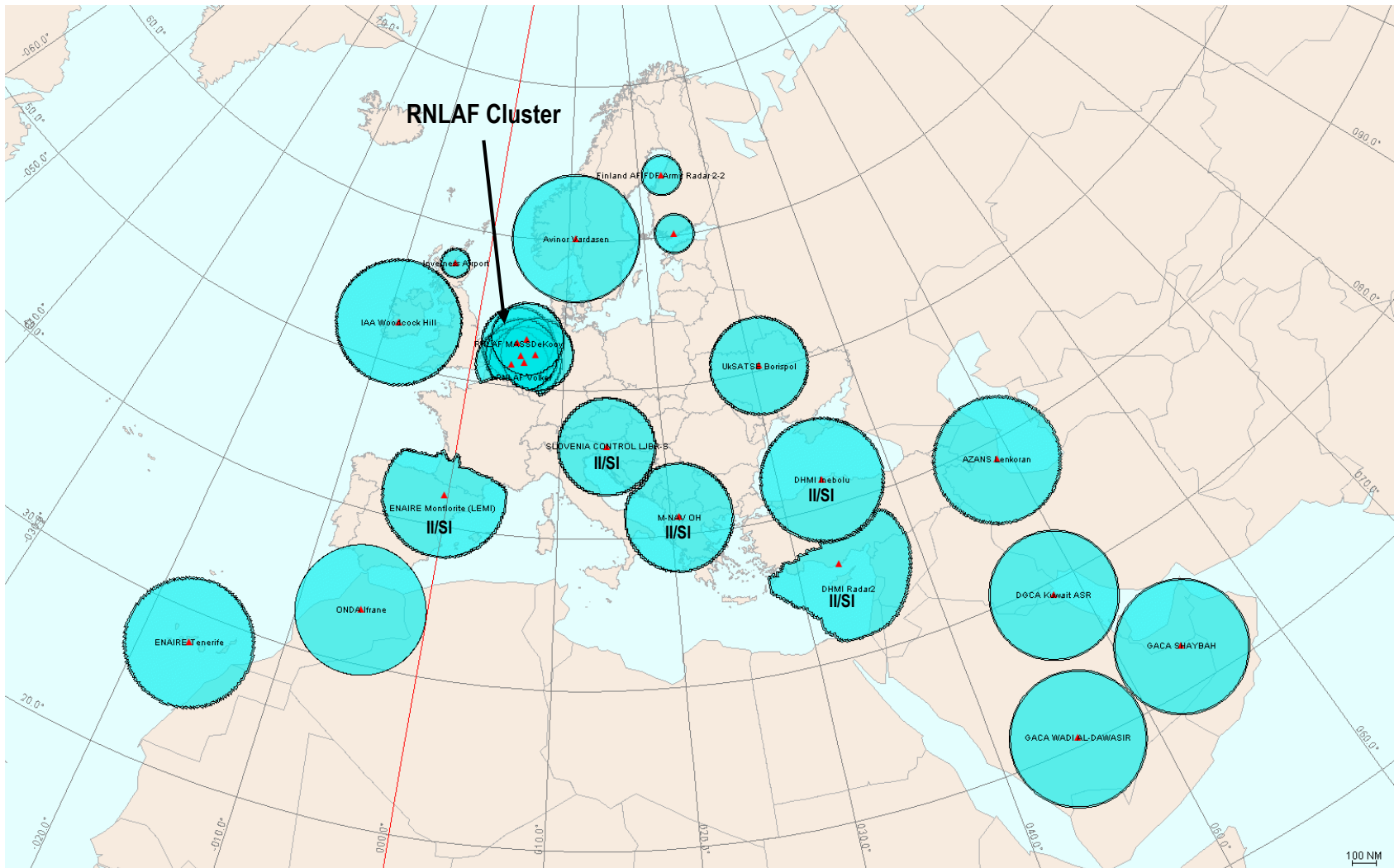
SI Code 54 – Cycle 30 – Surveillance and Lockout Coverage



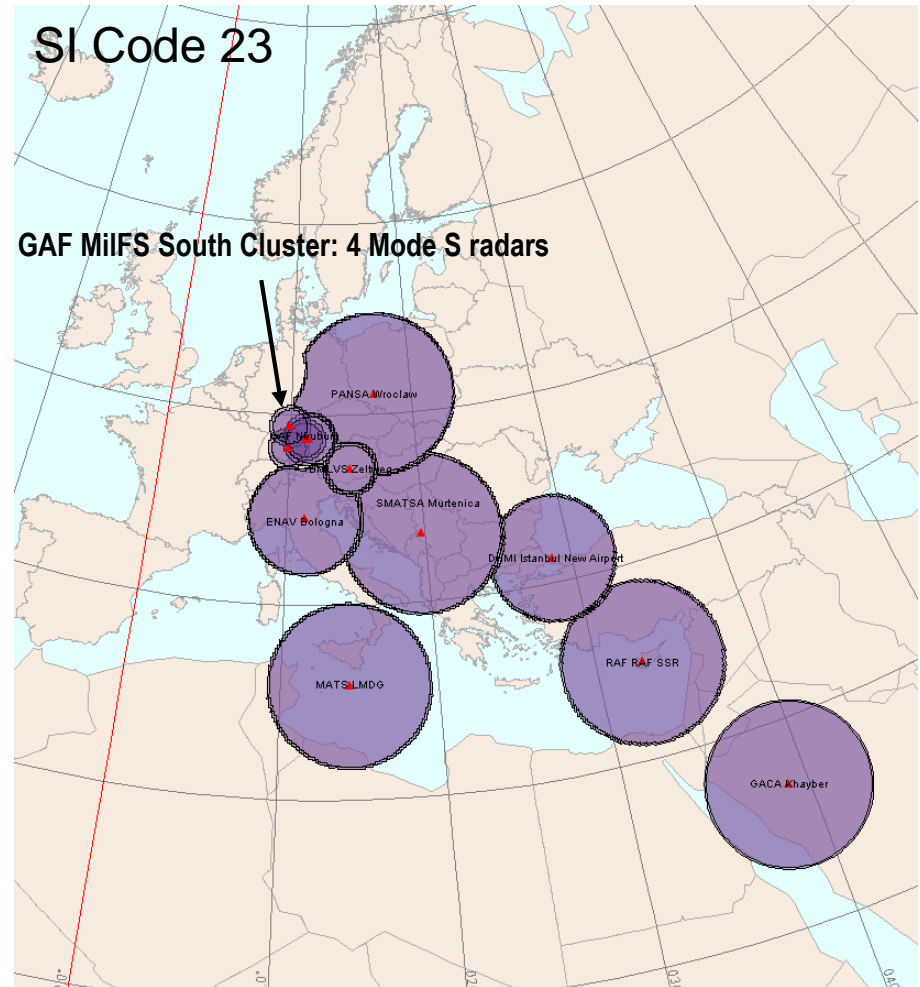
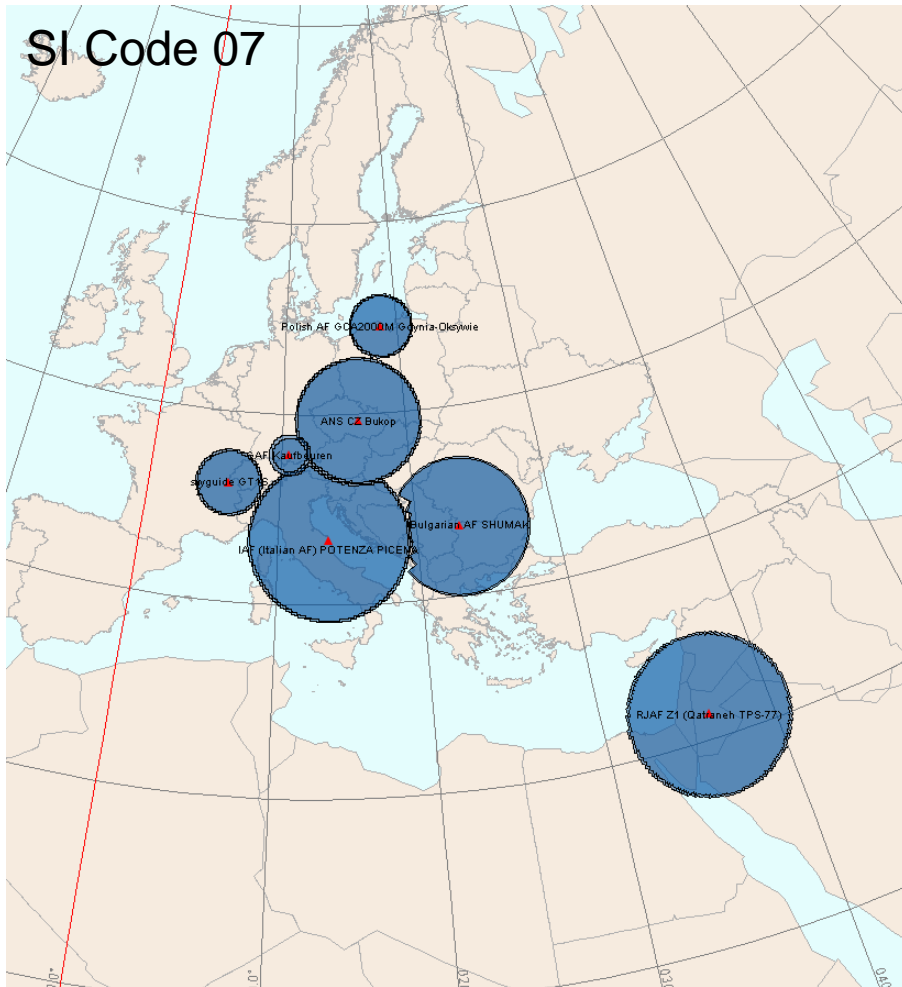
II 06 vs SI 06, SI 22, SI38 and SI 54 Cycle 30 – Lockout Coverage



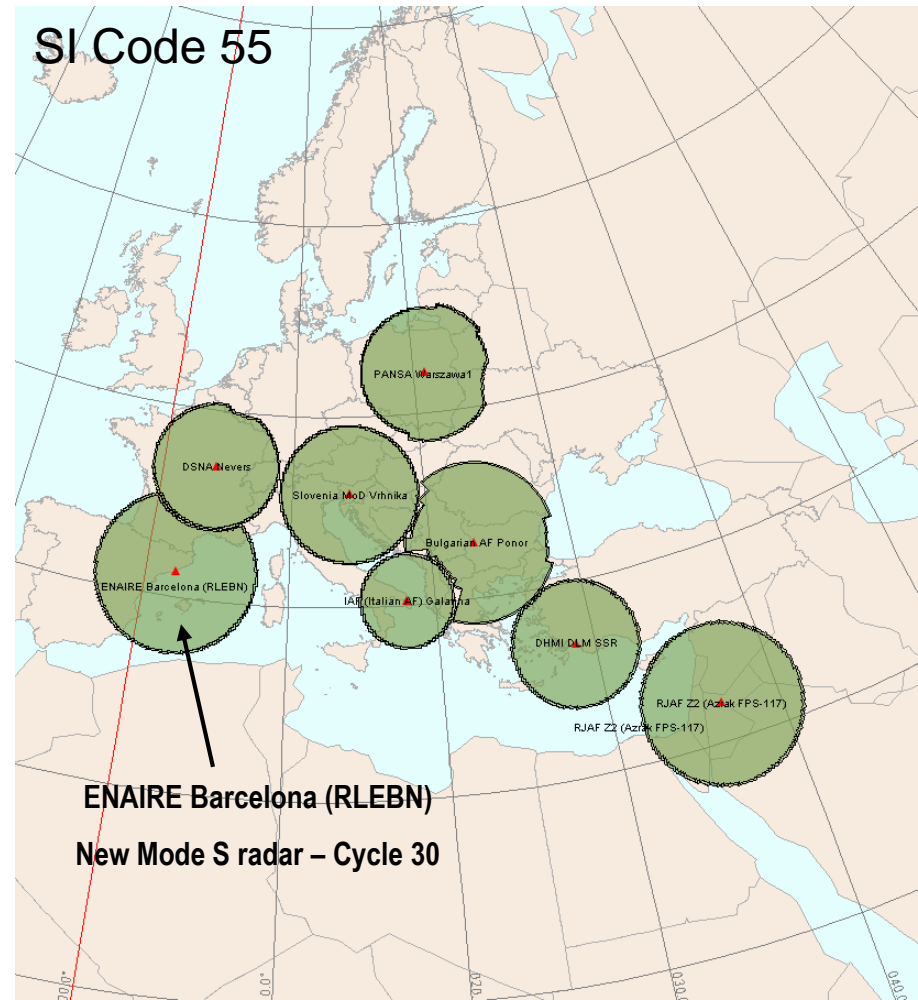
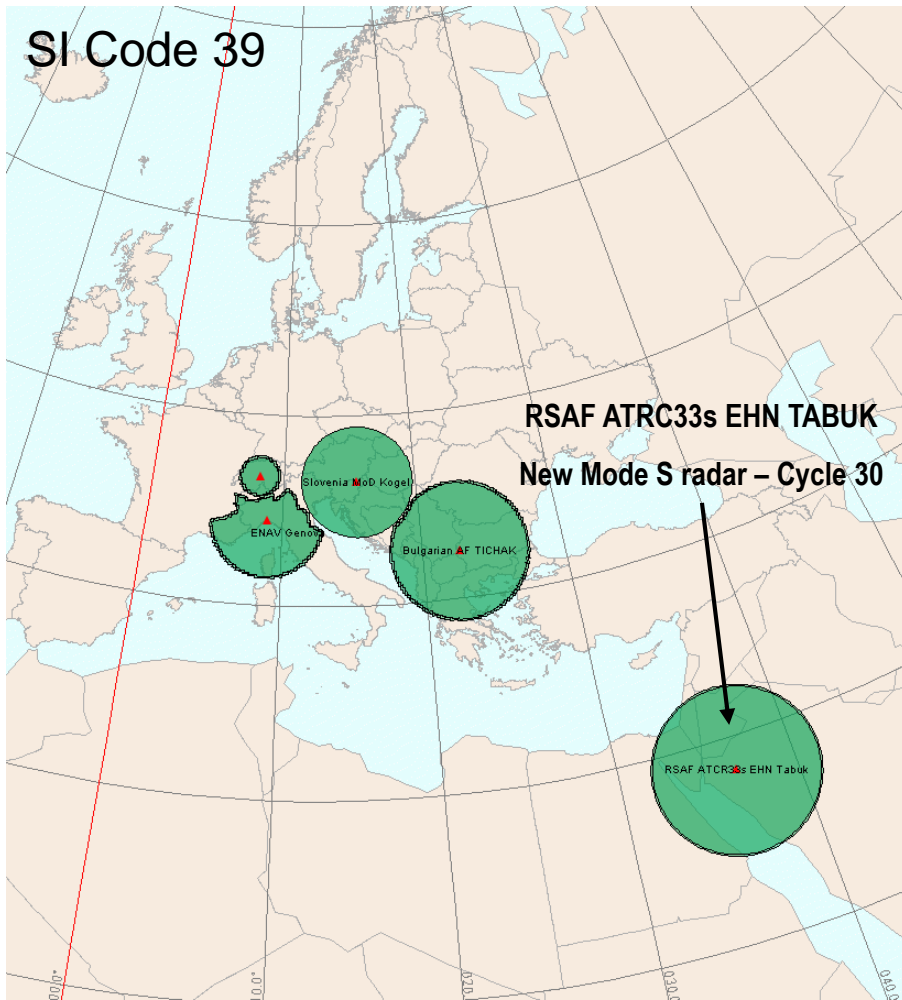
II Code 07 – Cycle 30 – Surveillance and Lockout Coverage



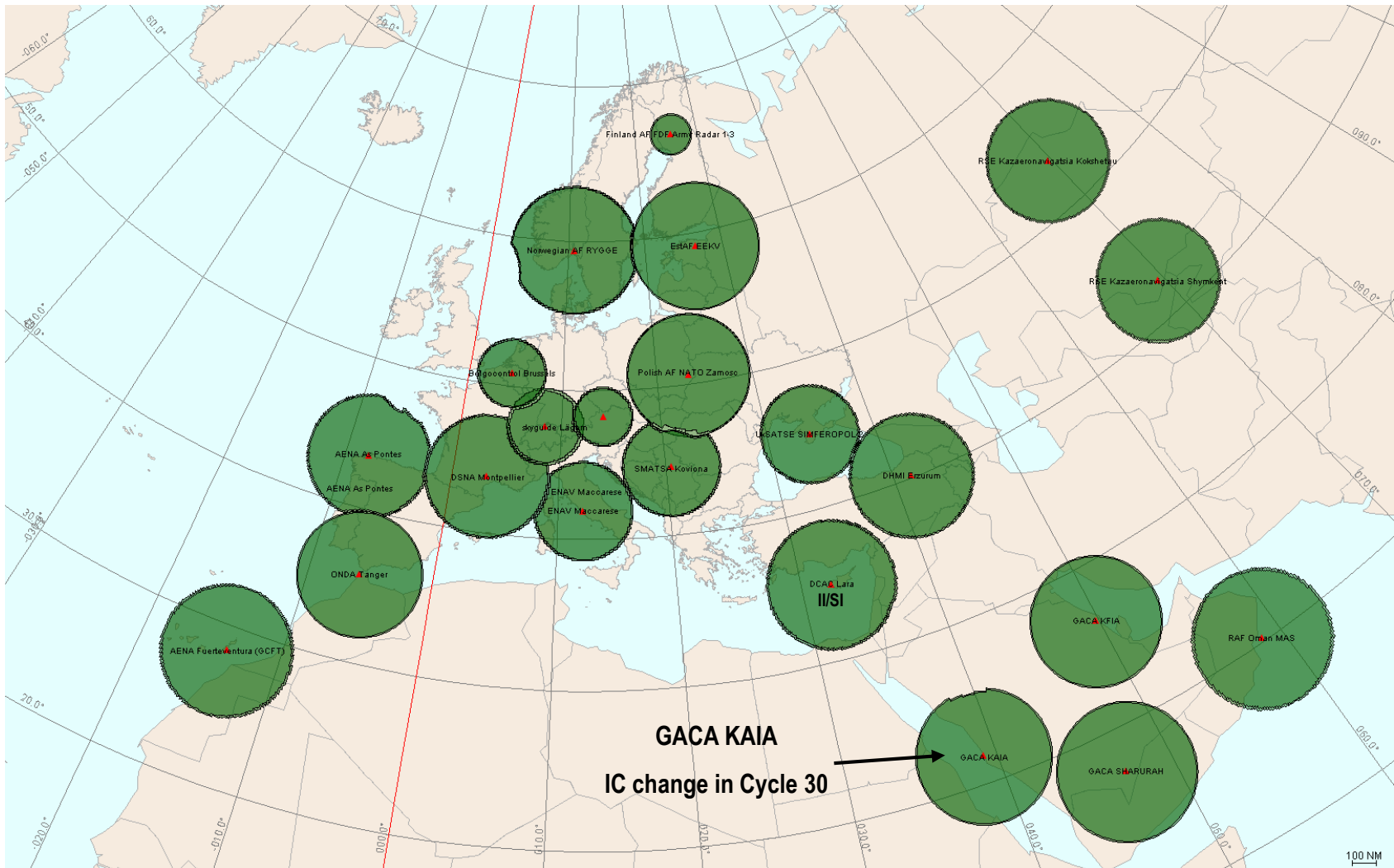
SI Code 07 and SI Code 23 Cycle 30 – Surveillance and Lockout Coverage



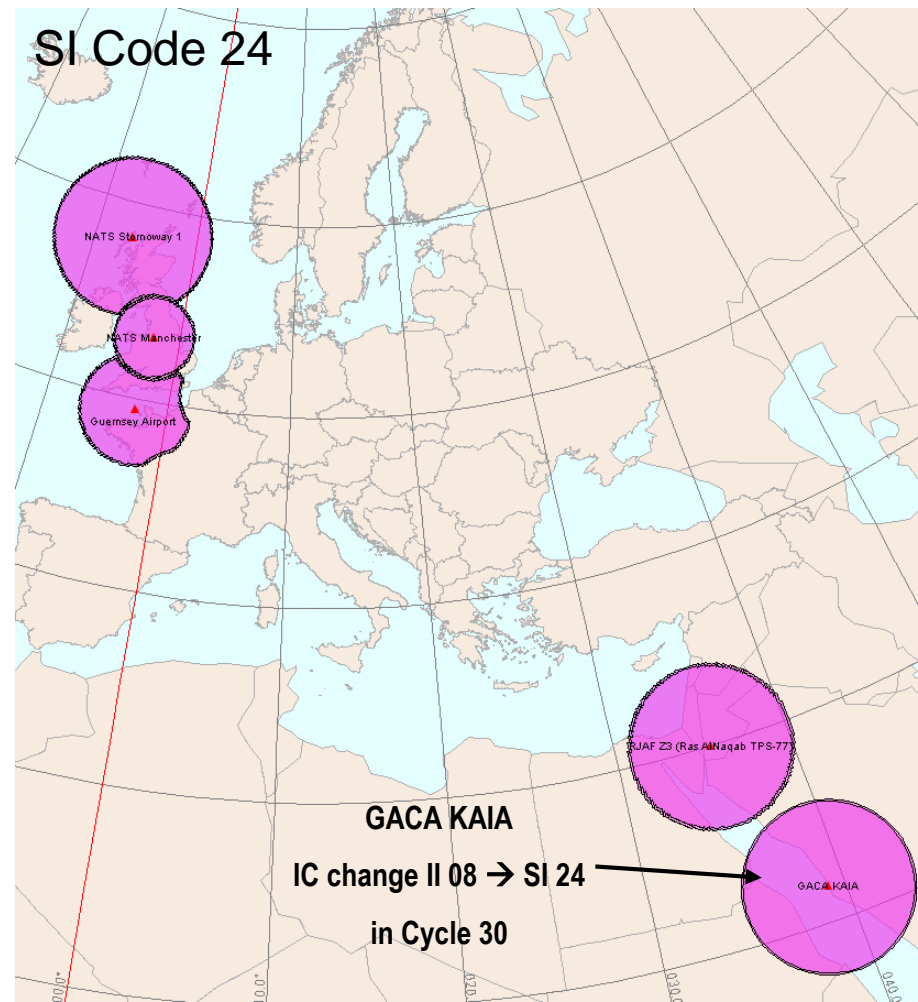
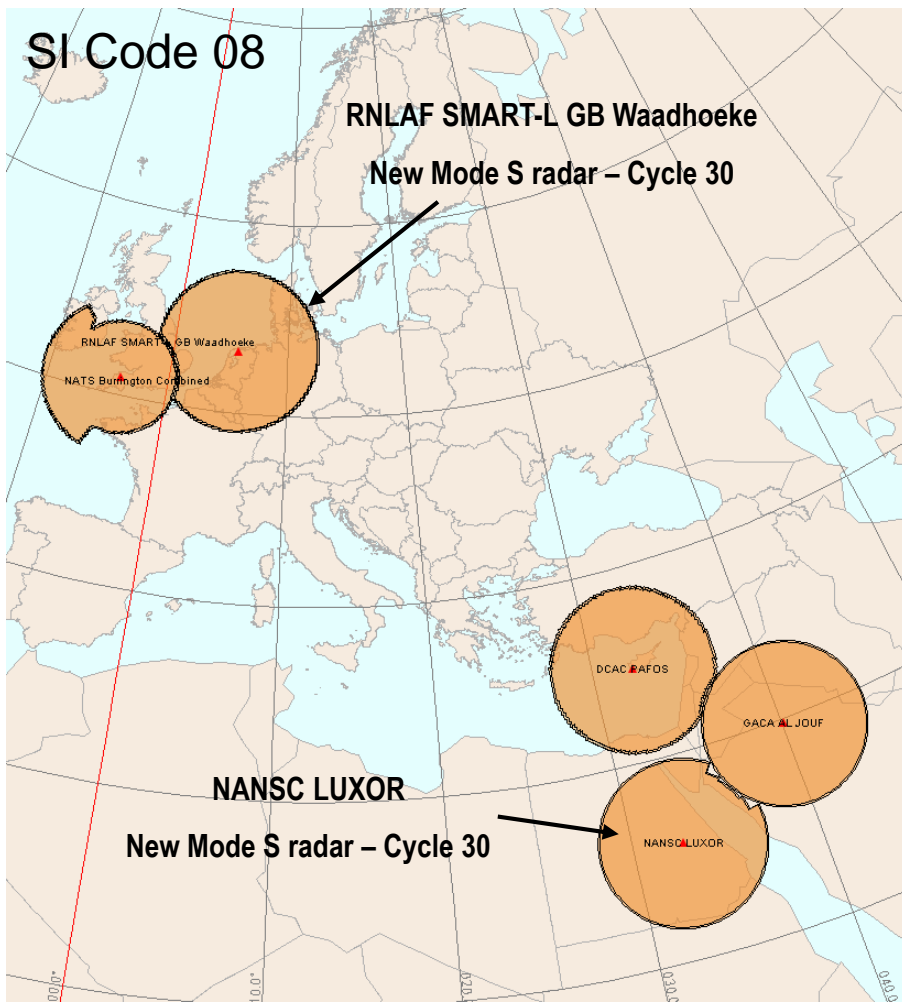
SI Code 39 and SI Code 55 Cycle 30 – Surveillance and Lockout Coverage



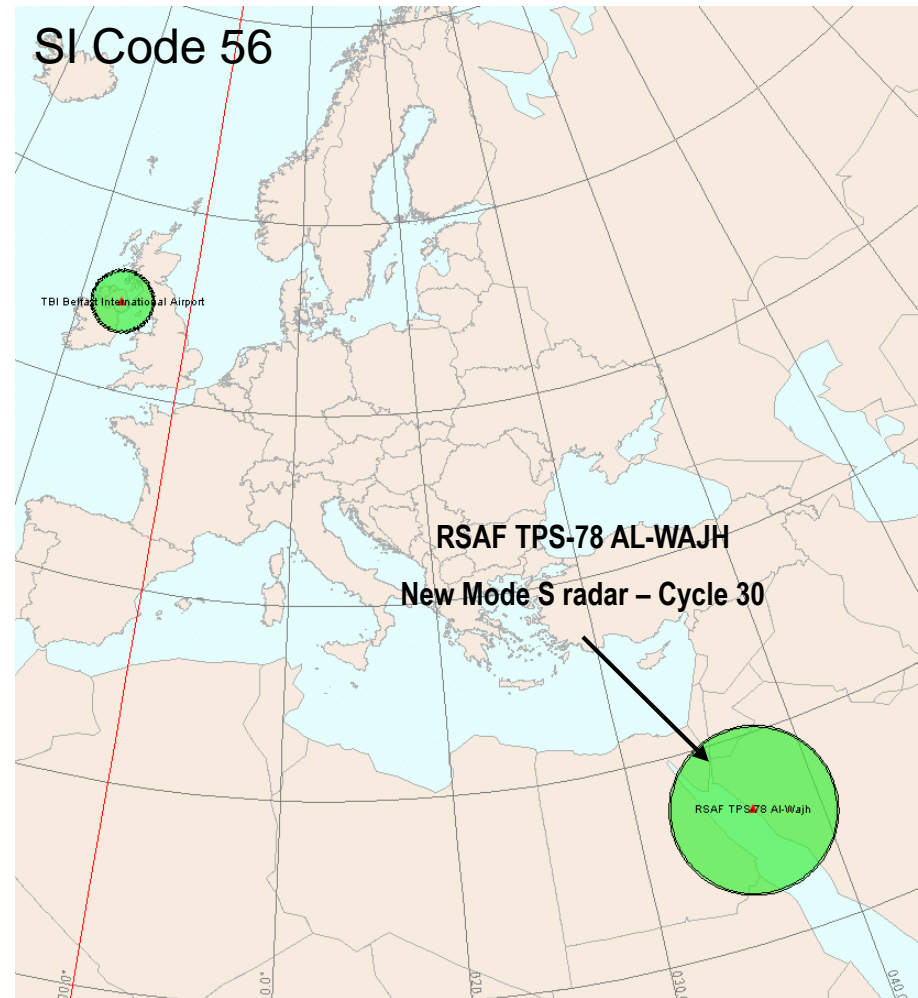
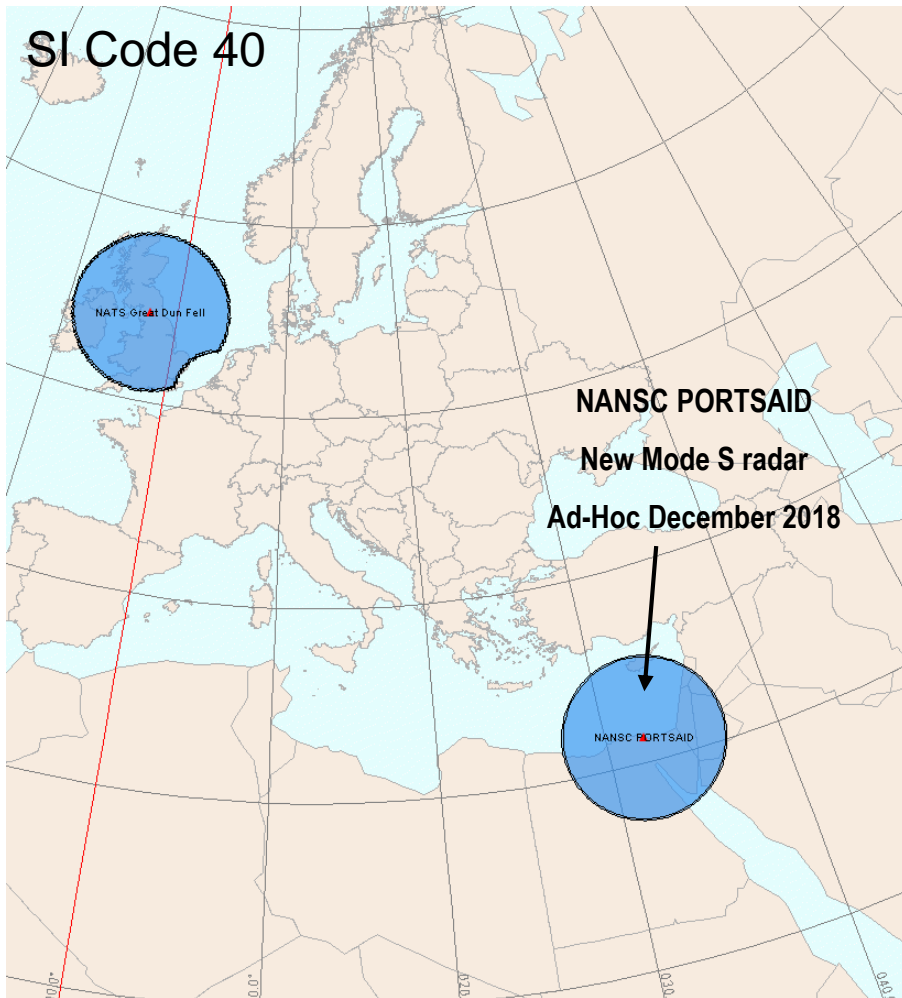
II Code 08 – Cycle 29 – Surveillance and Lockout Coverage



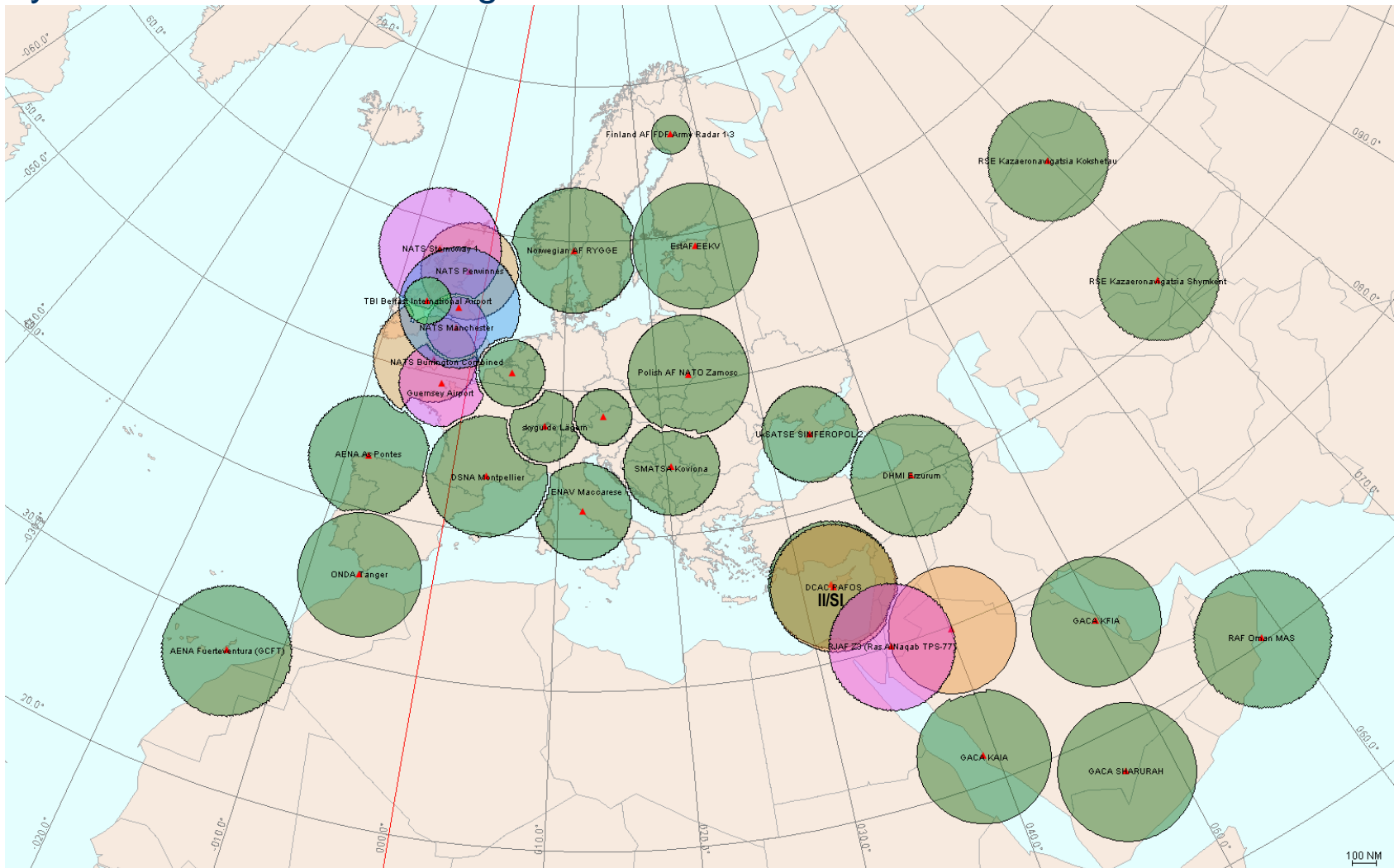
SI Code 08 and SI Code 24 Cycle 30 – Surveillance and Lockout Coverage



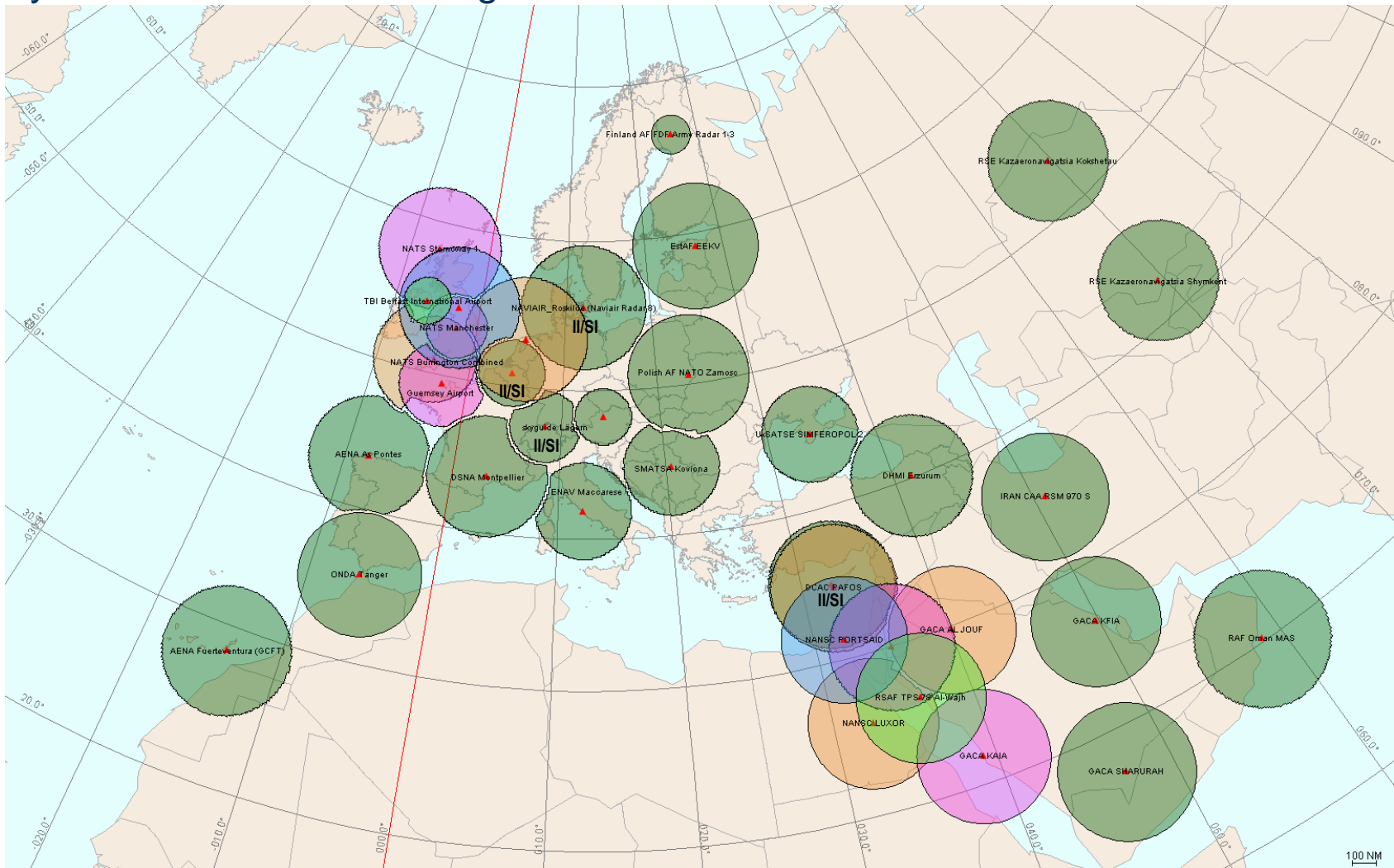
SI Code 40 and SI Code 56 Cycle 30 – Surveillance and Lockout Coverage



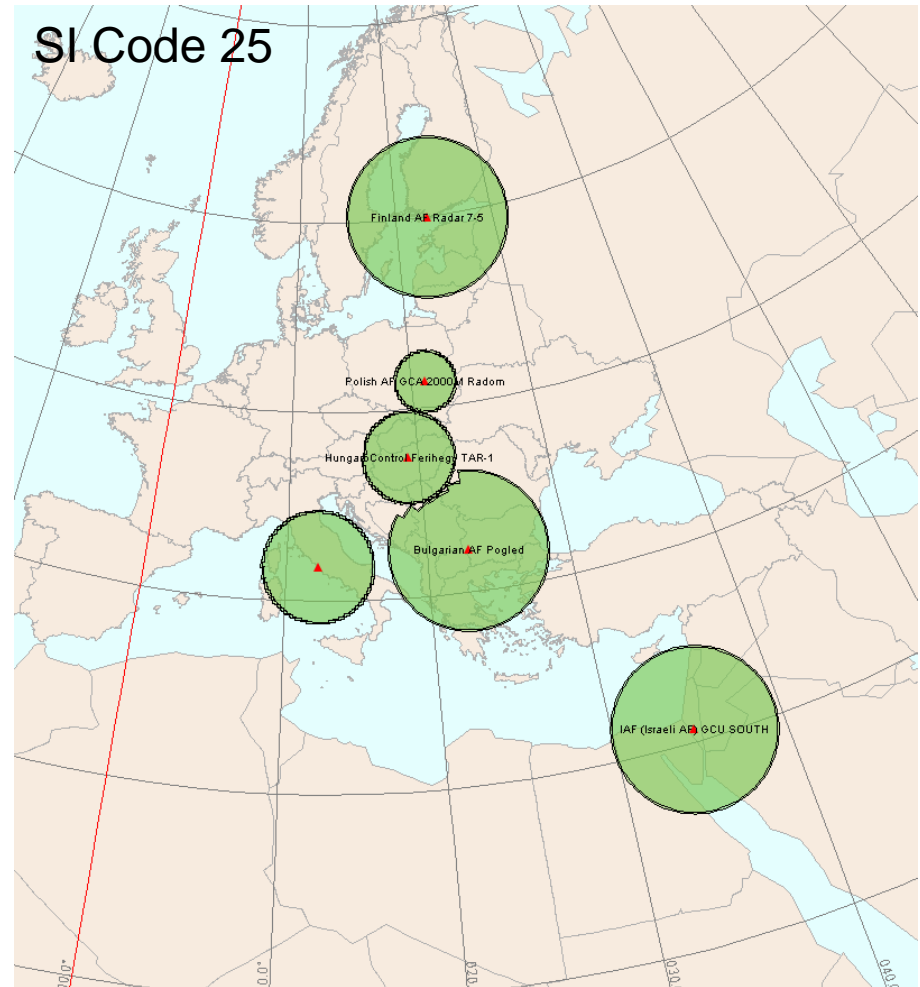
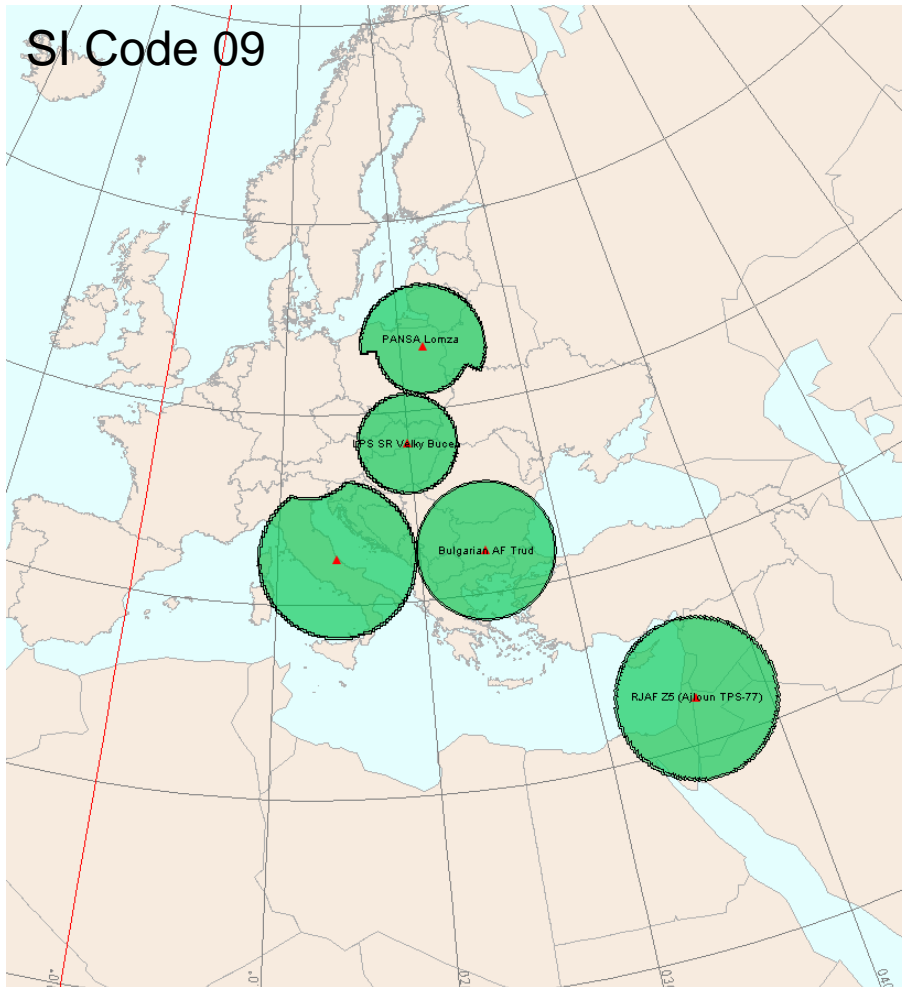
II 08 vs SI 08, SI 24, SI 40 and SI 56 Cycle 29 – Lockout Coverage



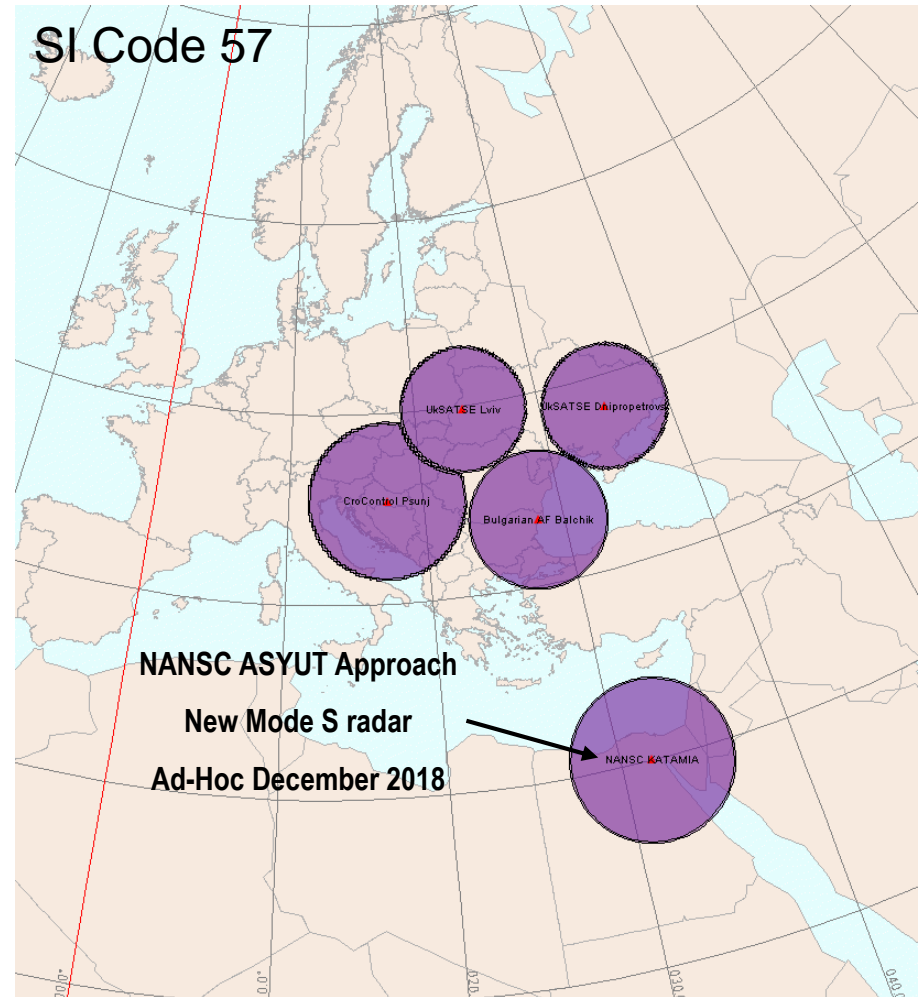
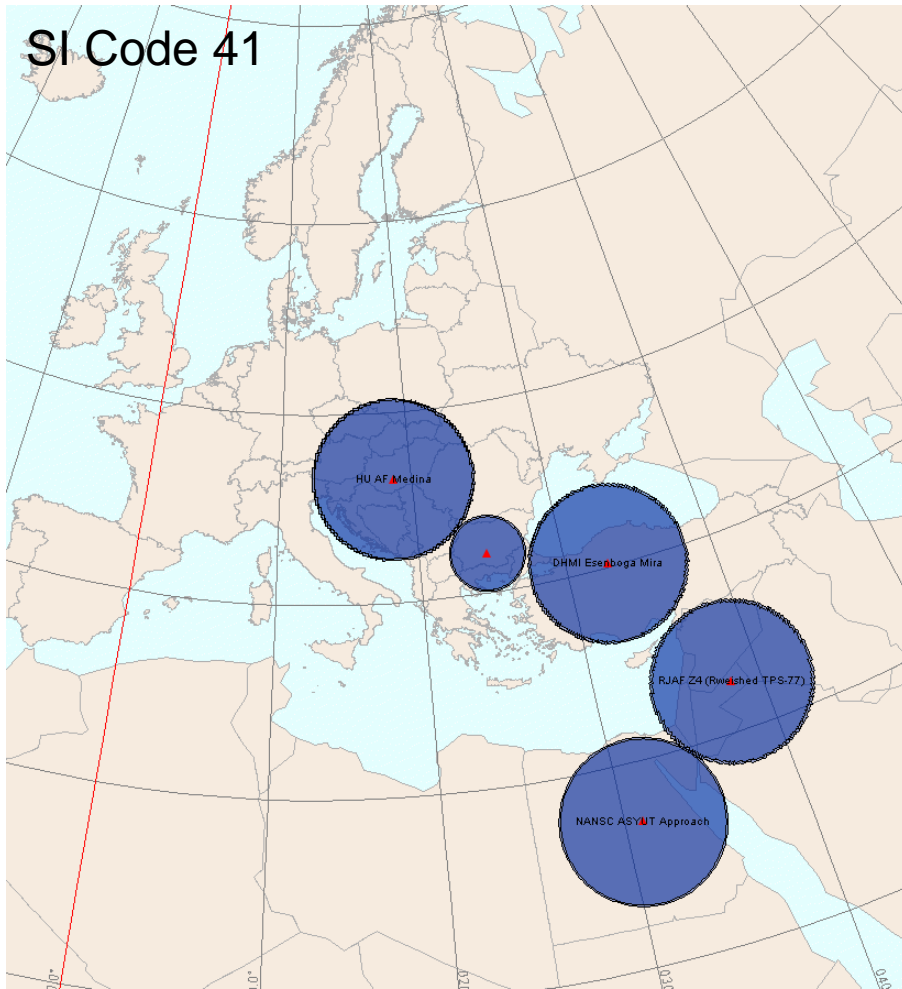
II 08 vs SI 08, SI 24, SI 40 and SI 56 Cycle 30 – Lockout Coverage



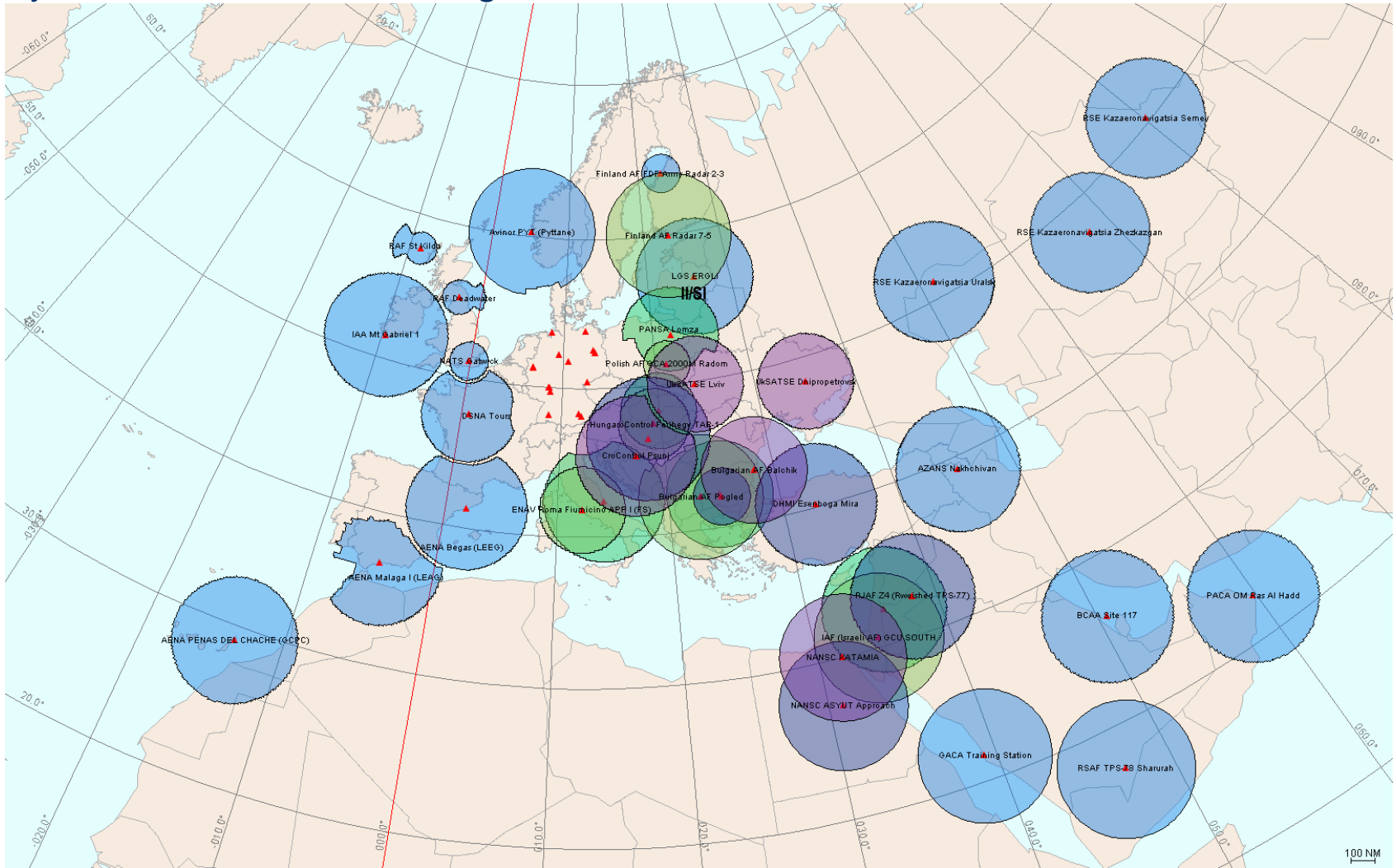
SI Code 09 and SI Code 25 Cycle 30 – Surveillance and Lockout Coverage



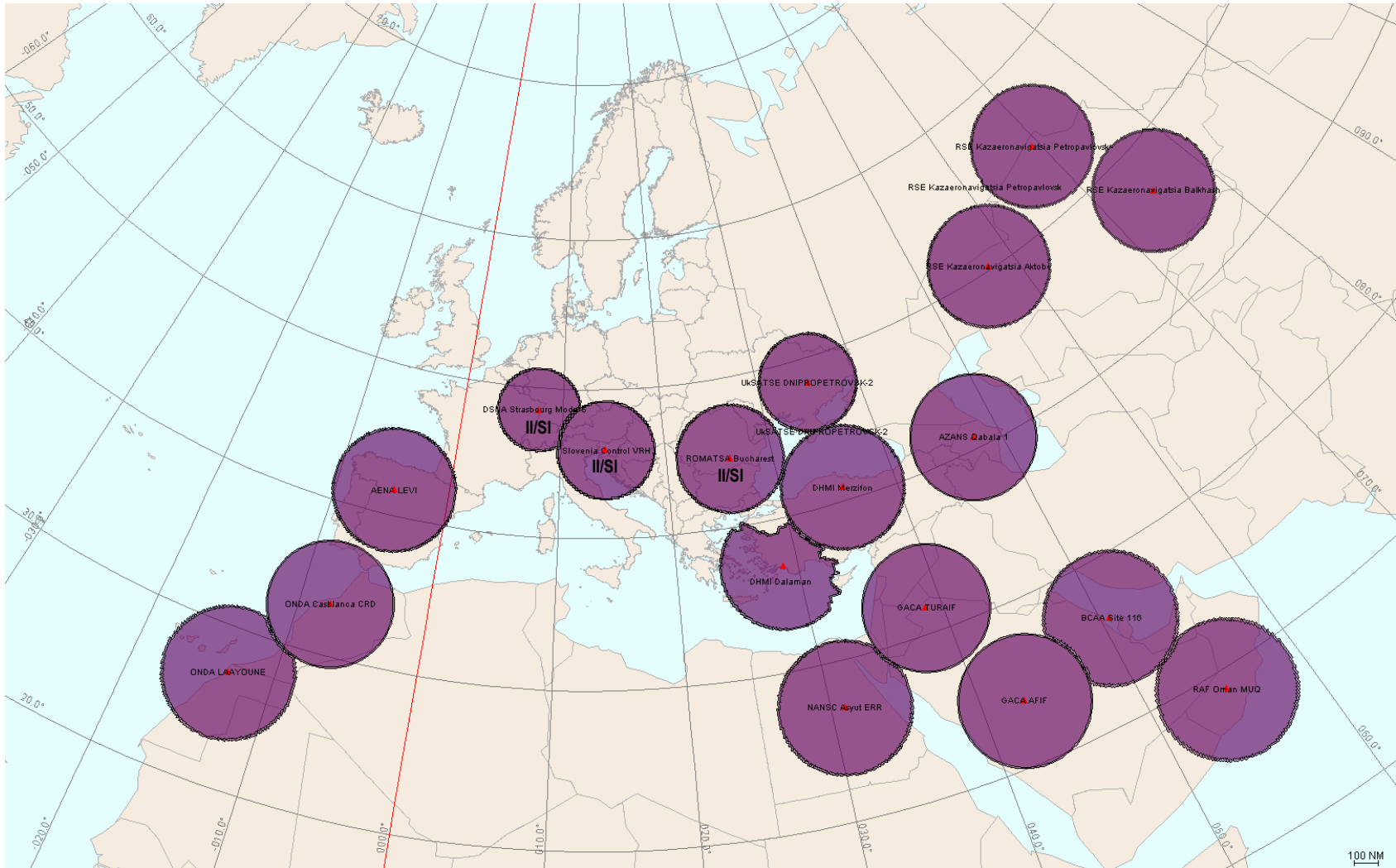
SI Code 41 and SI Code 57 Cycle 30 – Surveillance and Lockout Coverage



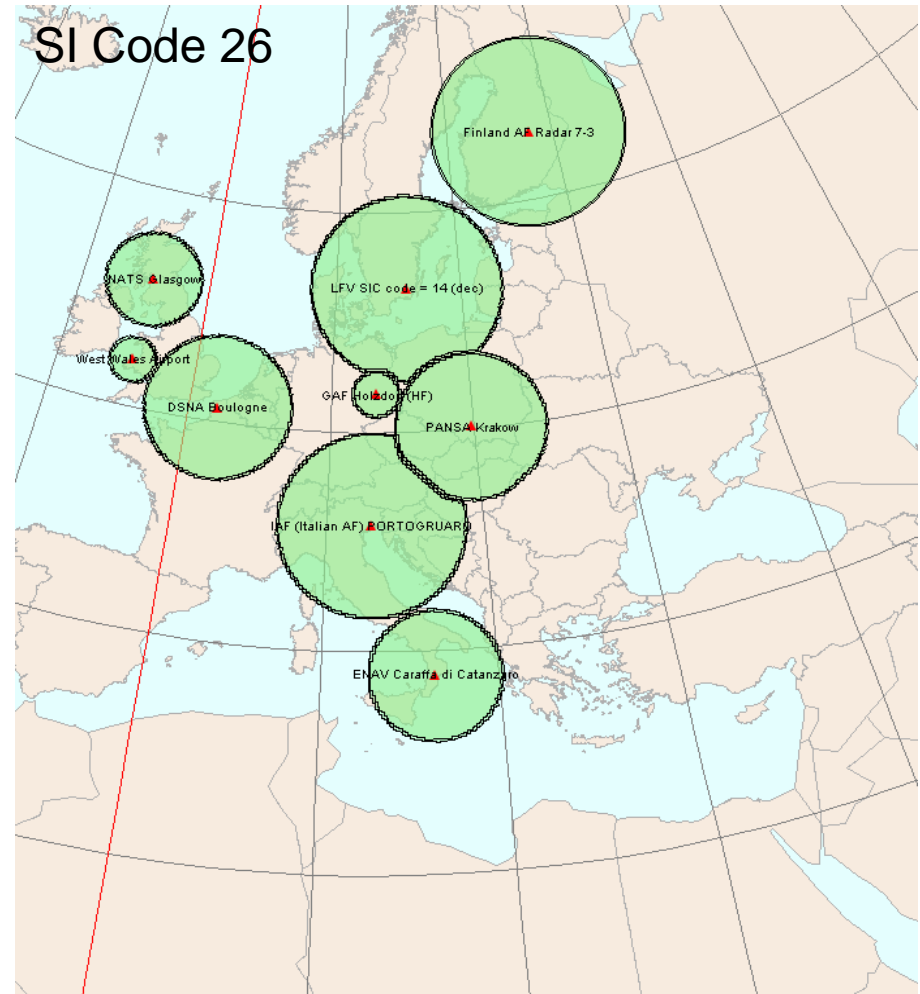
II 09 vs SI 09, SI 25, SI 41 and SI 57 Cycle 30 – Lockout Coverage



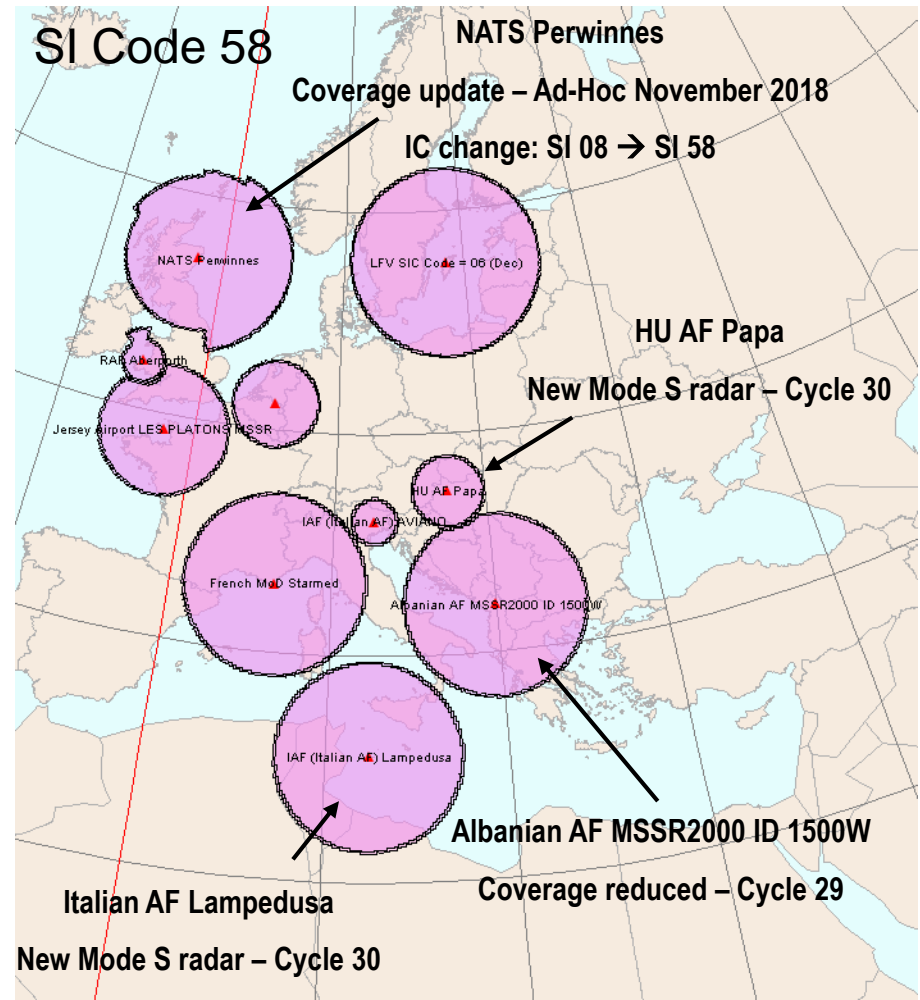
II Code 10 – Cycle 30 – Surveillance and Lockout Coverage



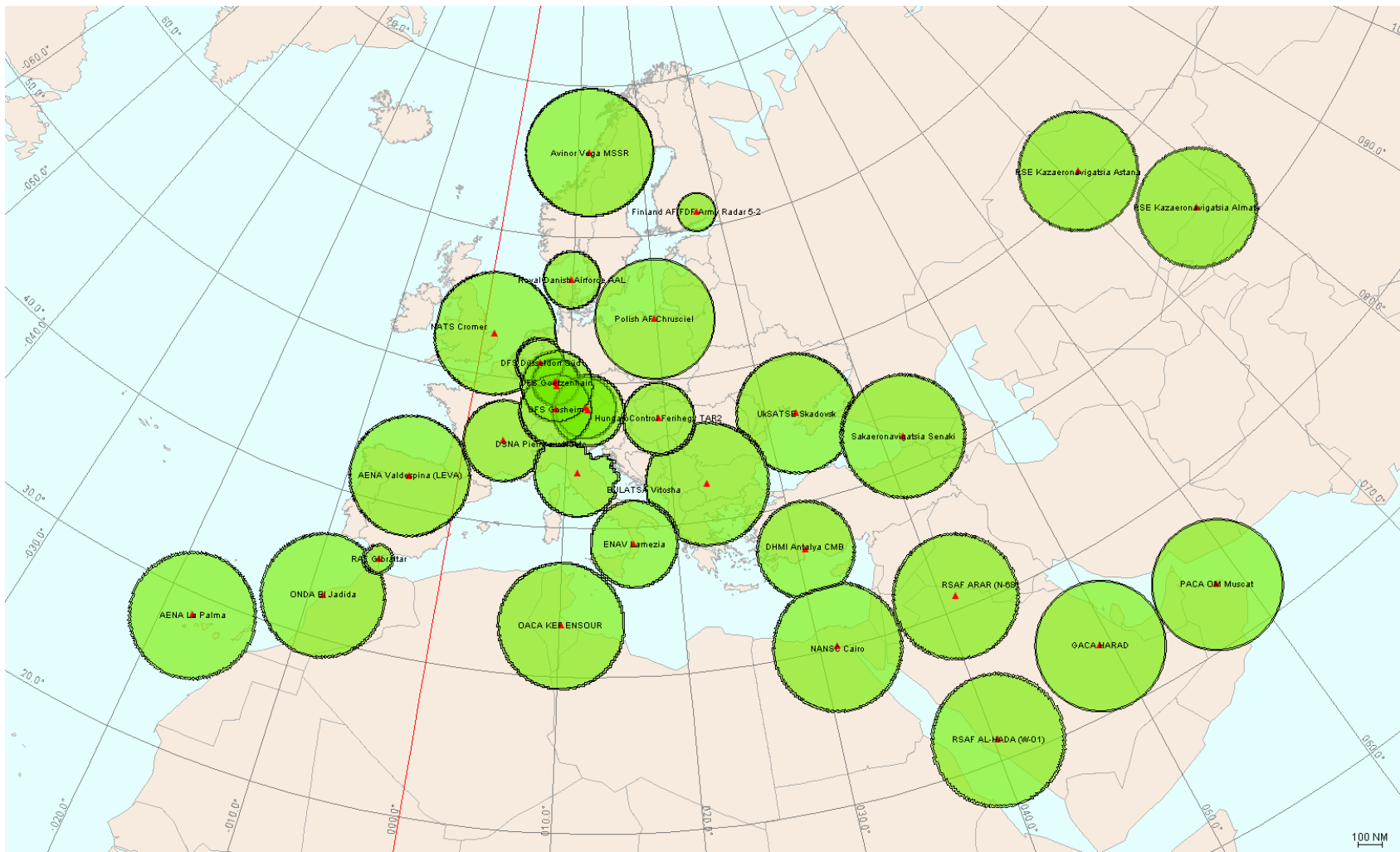
SI Code 10 and SI Code 26 Cycle 30 – Surveillance and Lockout Coverage



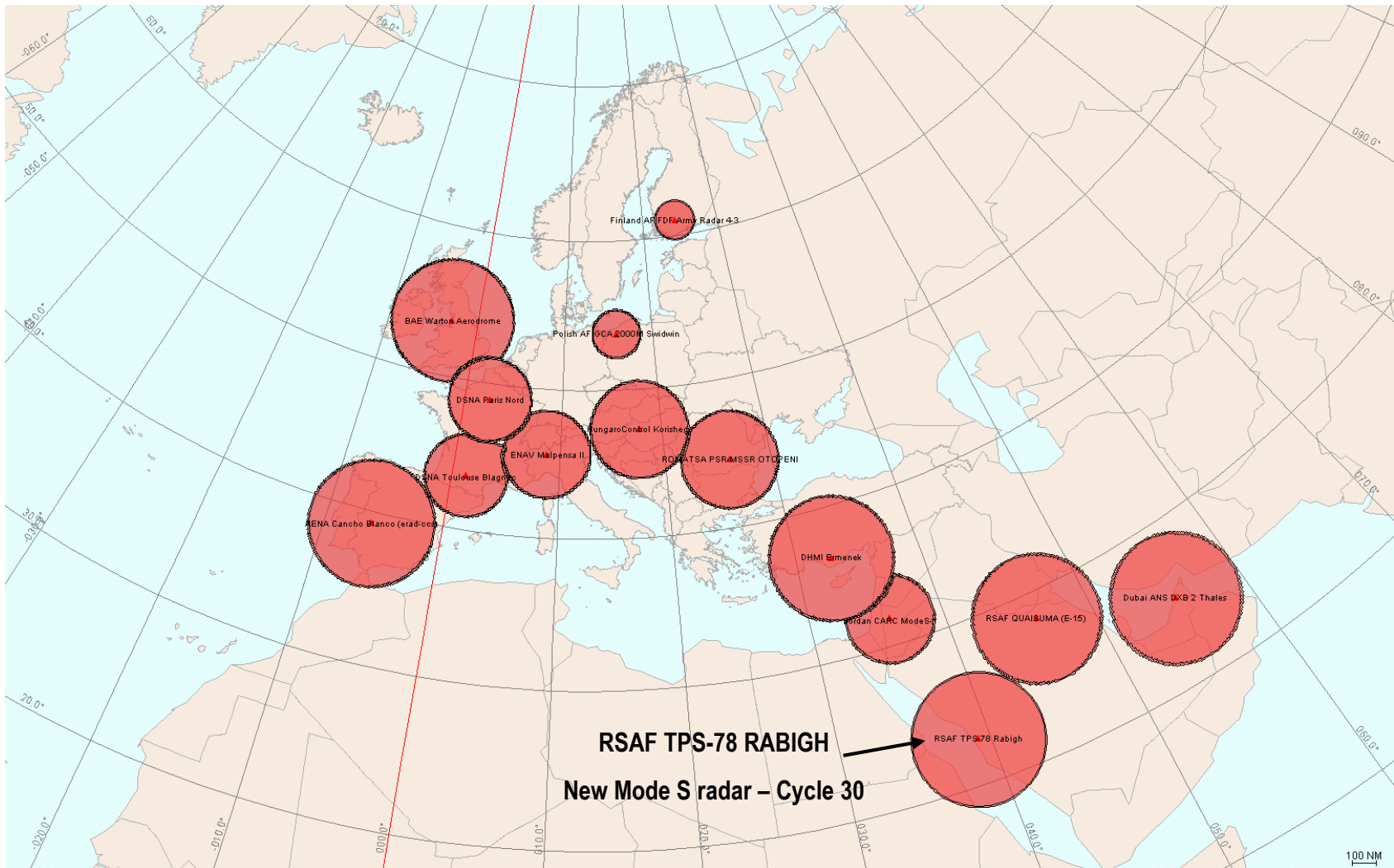
SI Code 42 and SI Code 58 Cycle 30 – Surveillance and Lockout Coverage



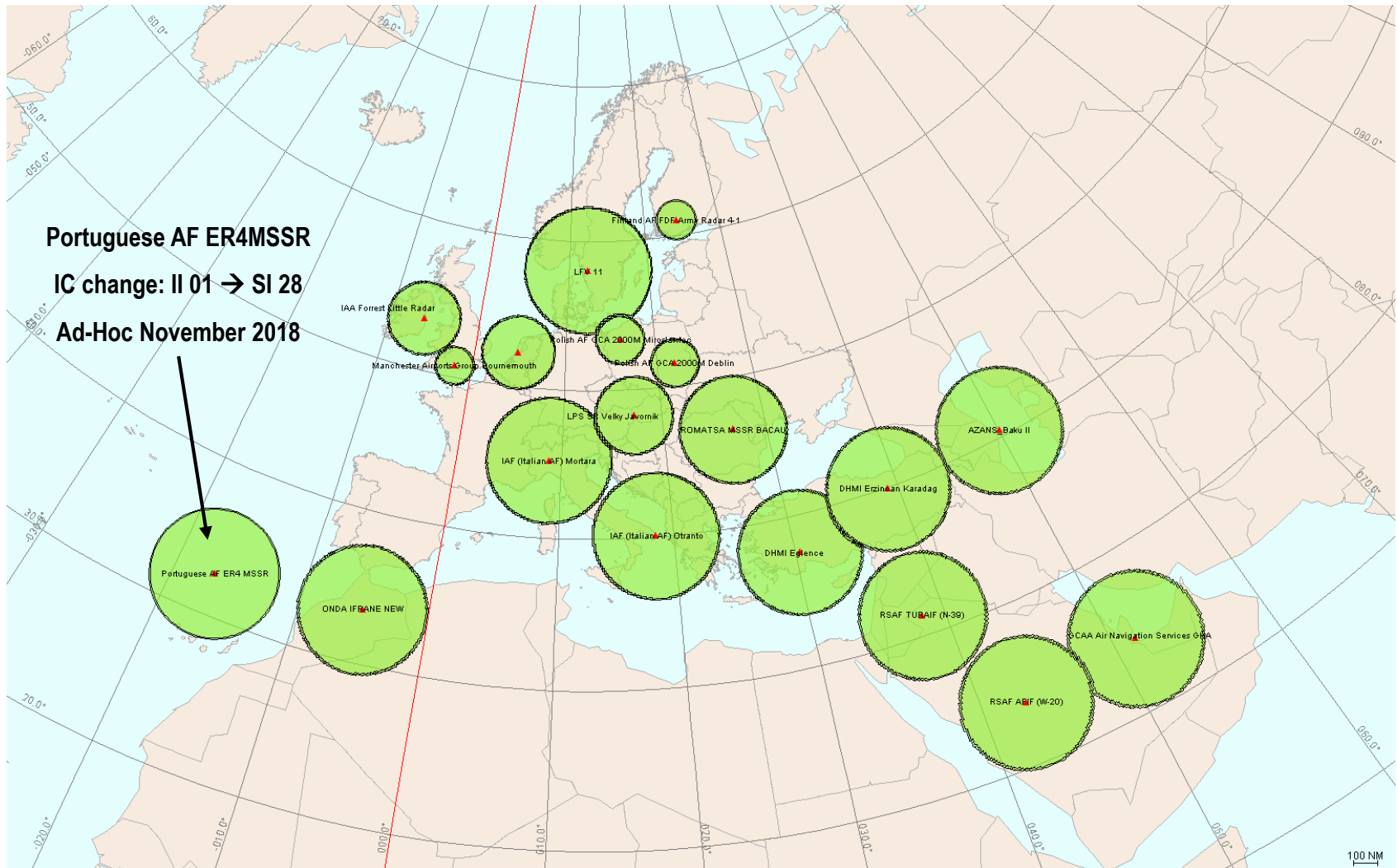
II Code 11 – Cycle 30 – Surveillance and Lockout Coverage



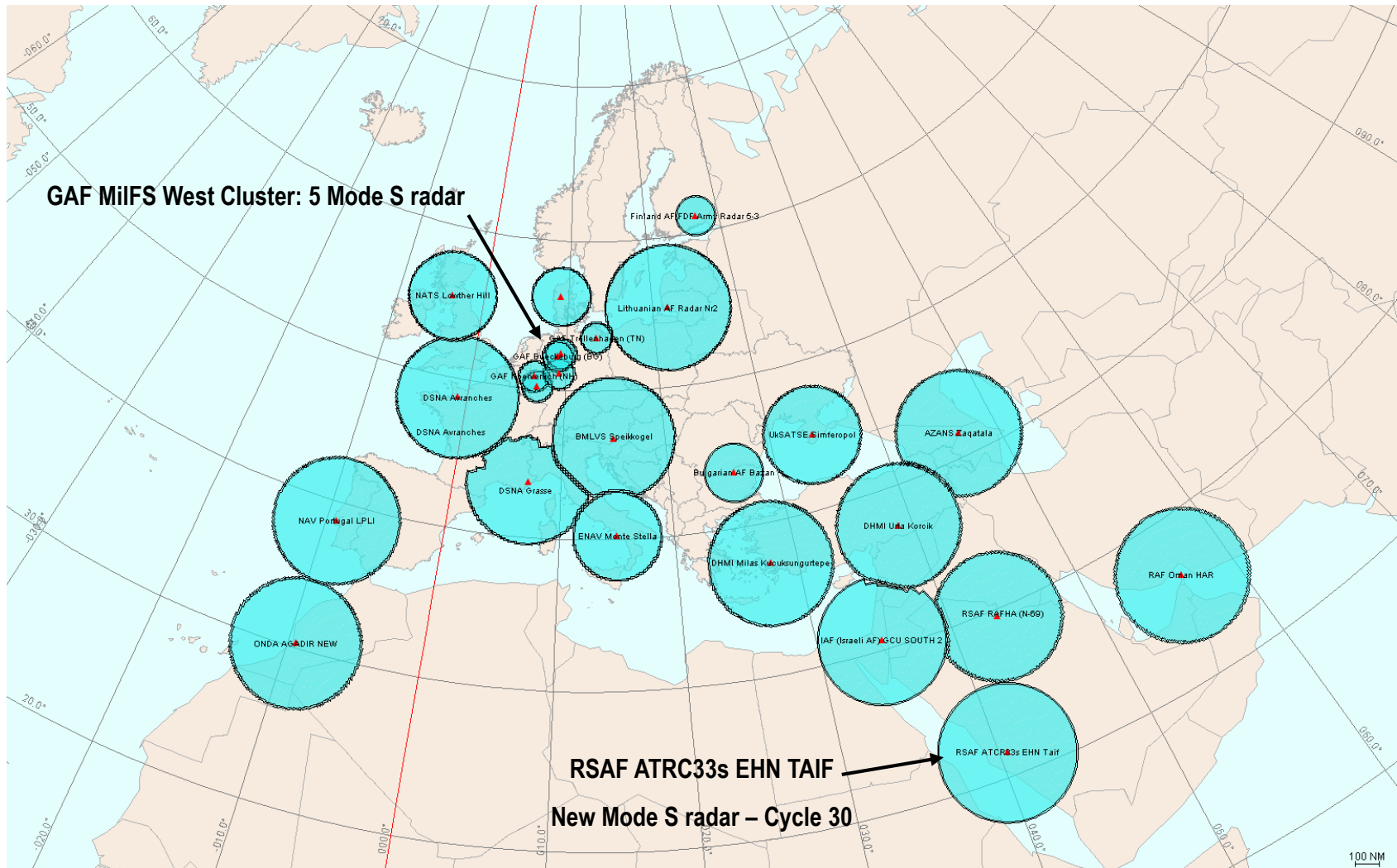
SI Code 12 – Cycle 30 – Surveillance and Lockout Coverage



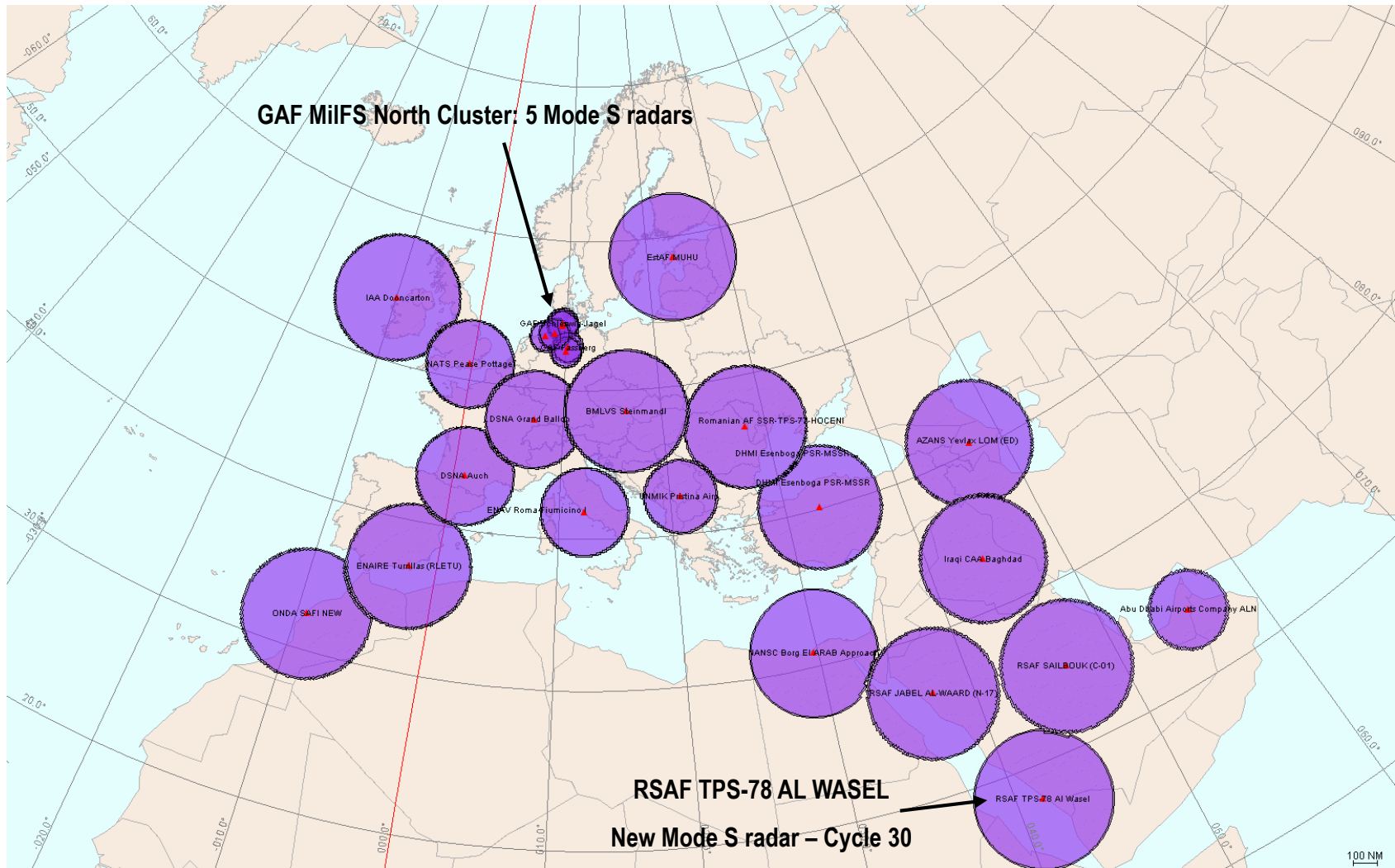
SI Code 28 – Cycle 30 – Surveillance and Lockout Coverage



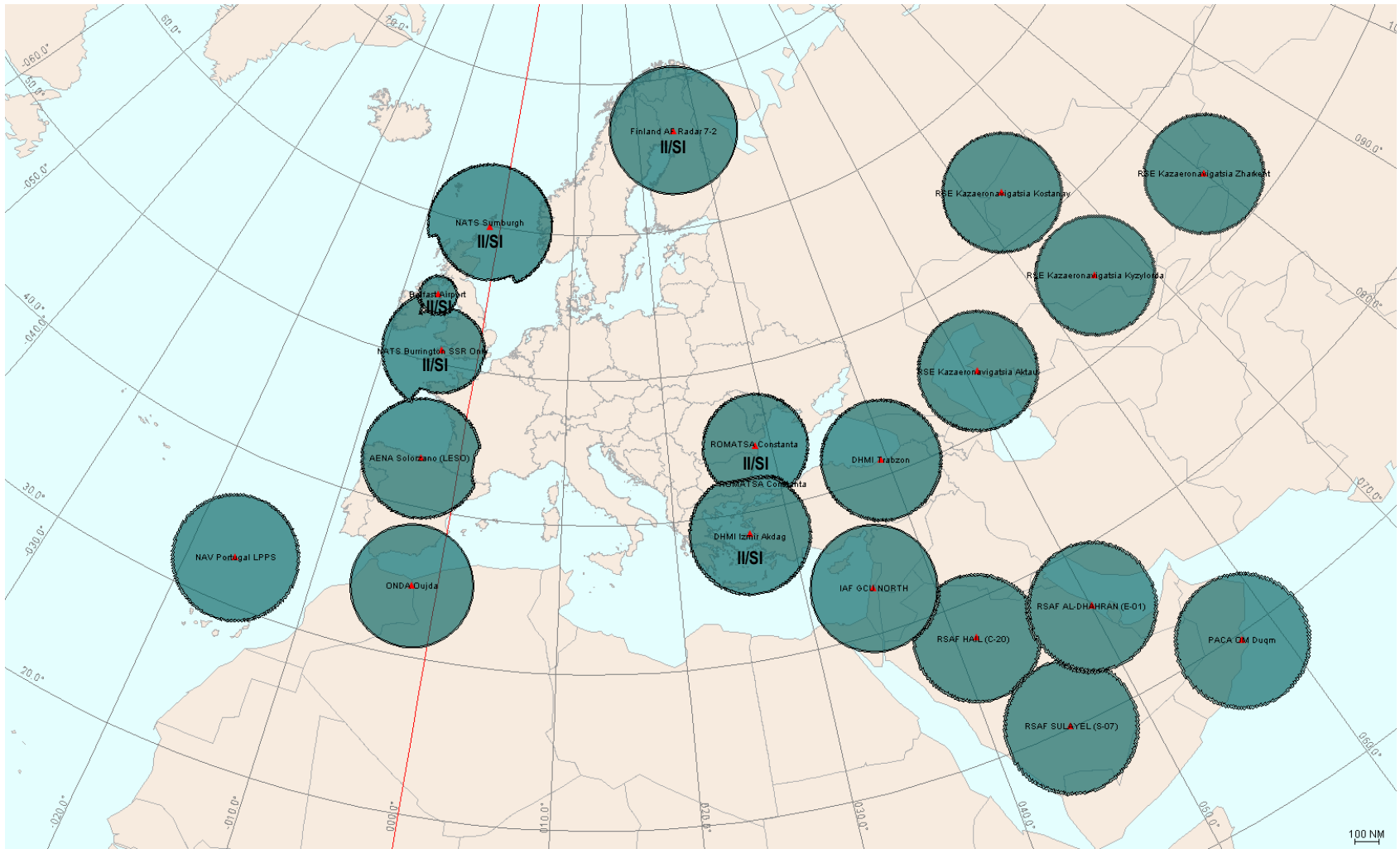
SI Code 44 – Cycle 30 – Surveillance and Lockout Coverage



SI Code 60 – Cycle 30 – Surveillance and Lockout Coverage

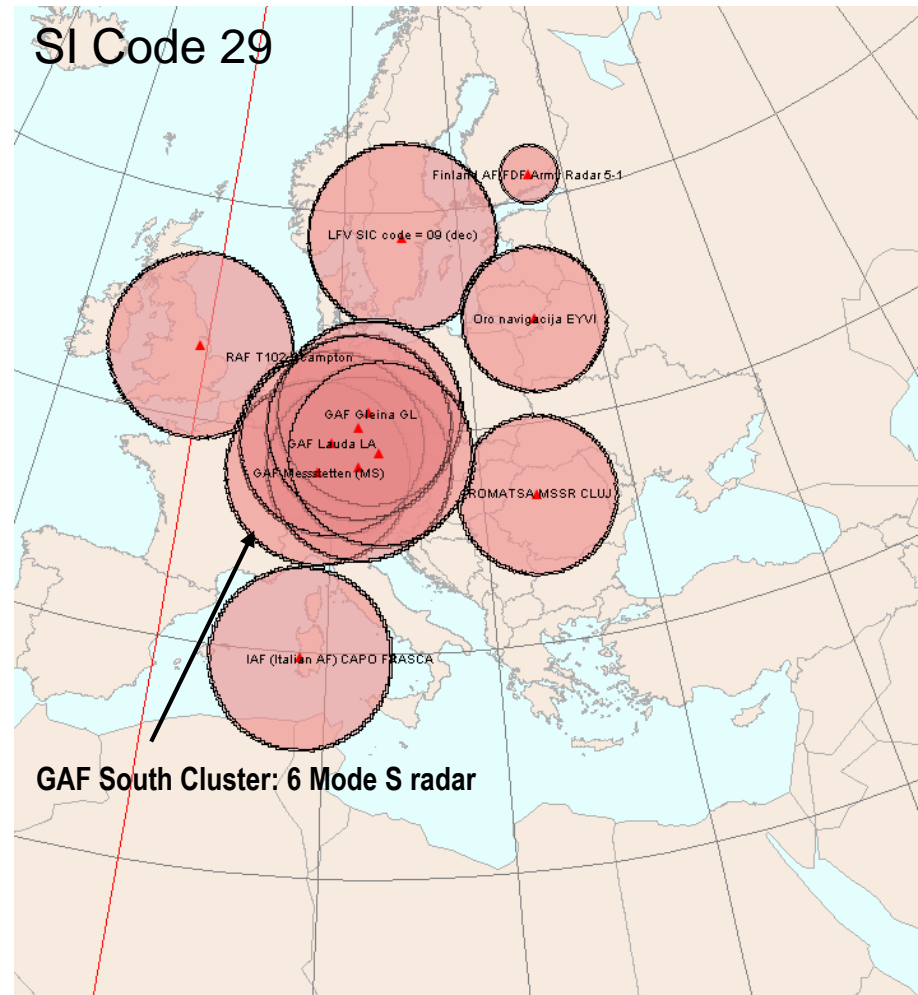
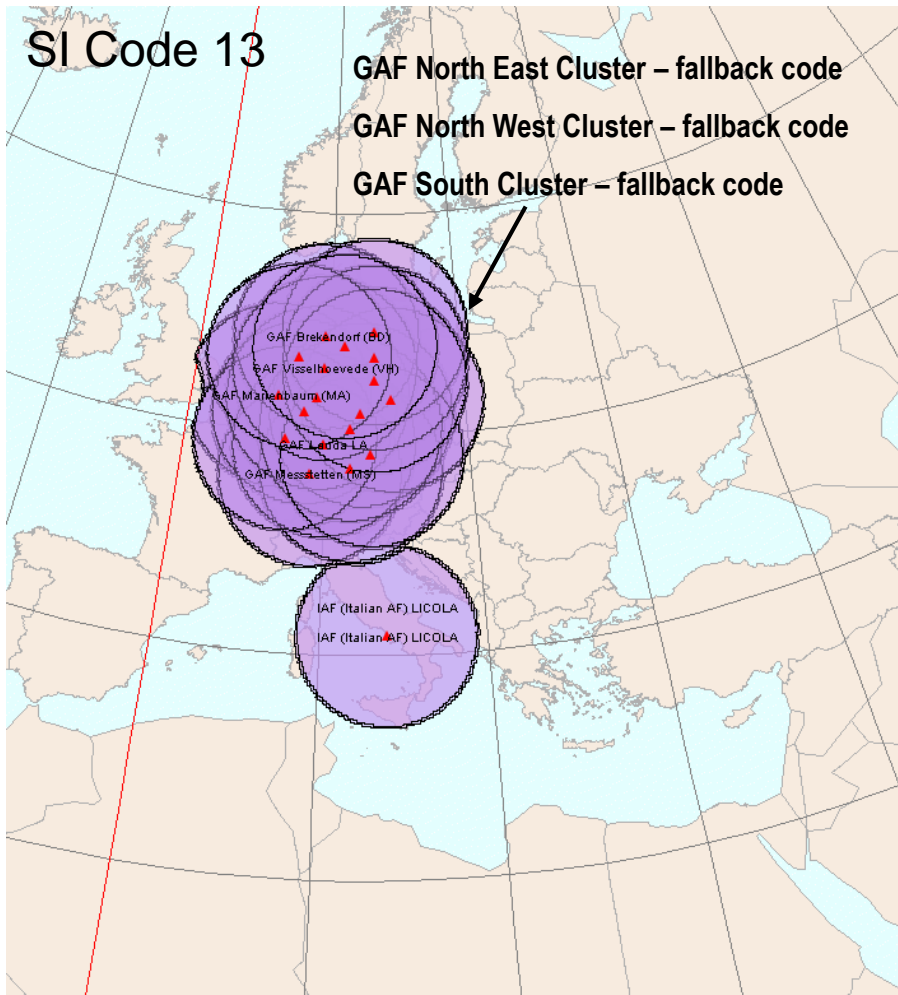


II Code 13 – Cycle 30 – Surveillance and Lockout Coverage

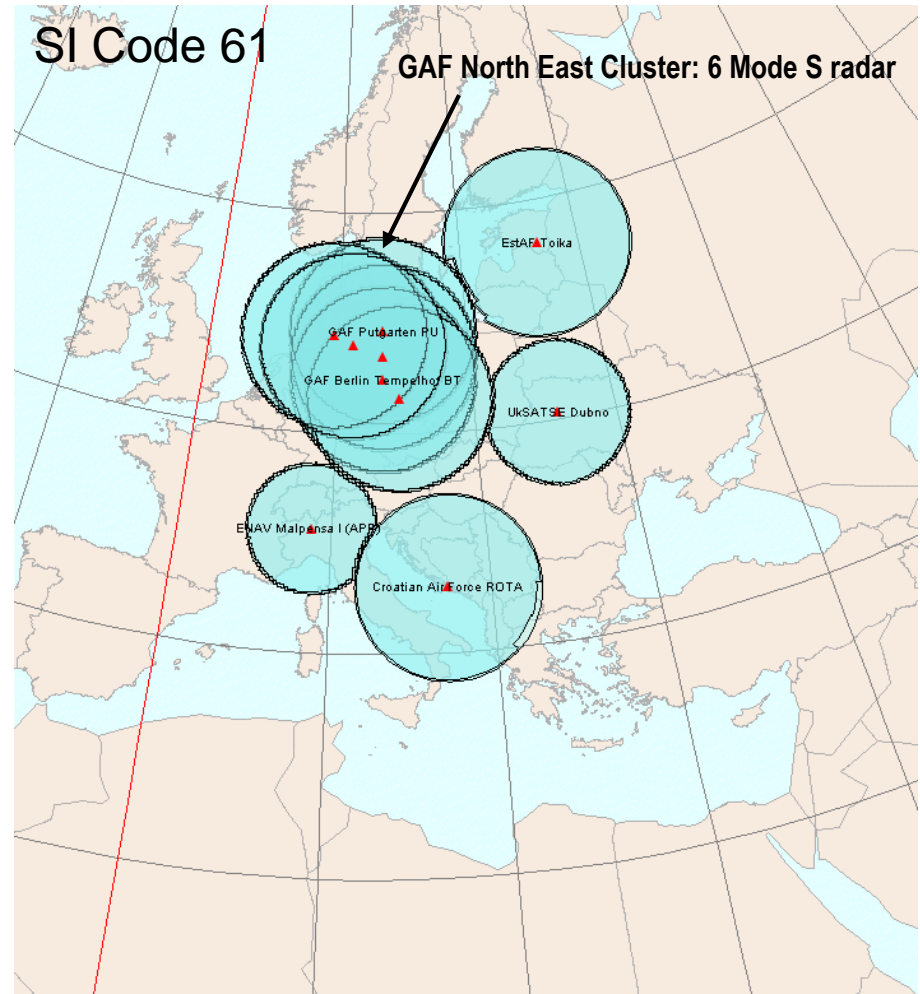
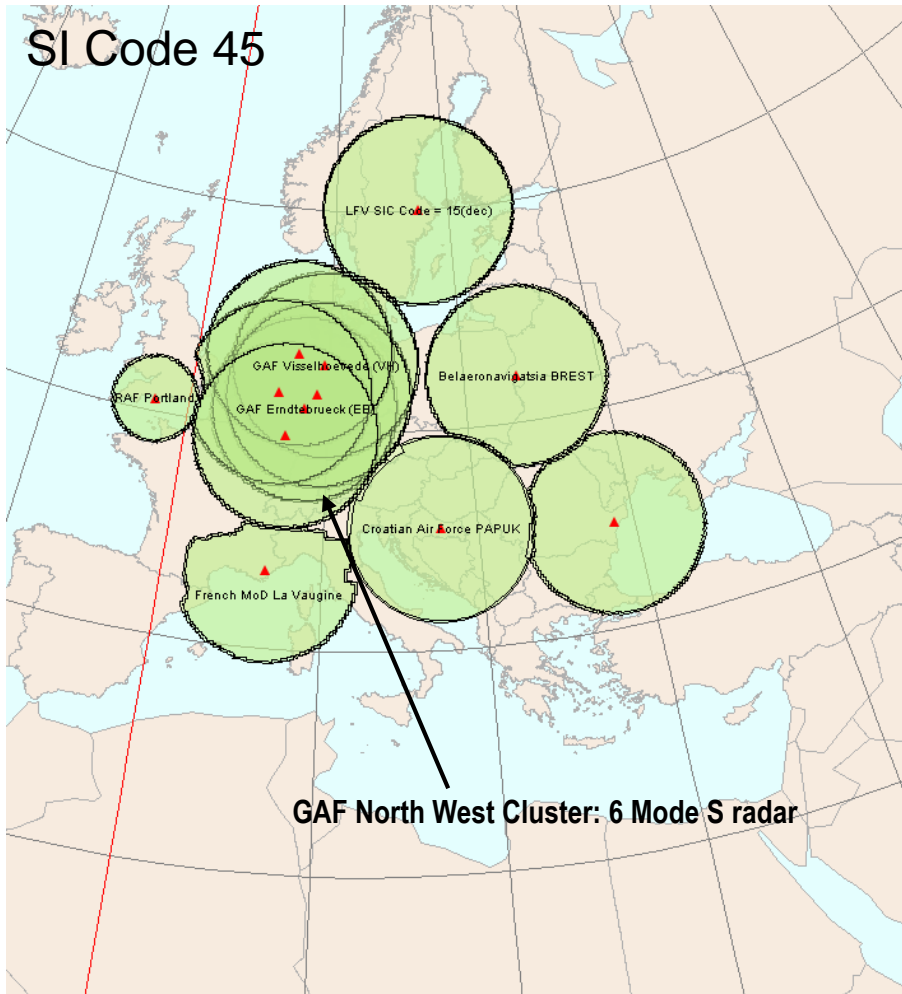


SI Code 13 and SI Code 29

Cycle 30 – Surveillance and Lockout Coverage



SI Code 45 and SI Code 61 Cycle 30 – Surveillance and Lockout Coverage



II 13 vs SI 13, SI 29, SI 45 and SI 61

Cycle 30 – Lockout Coverage

