



Jammertest 2025 Transmission Plan

Jammertest Consortium

2025-08-19
10:09:54

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Monday

Test Area 1

Monday morning before lunch will be used for setting up equipment and checking that all systems are operational. After lunch the testing will start with high power jamming with different waveforms, CW, Sweep, PRN at different GNSS bands.

Test Area 2

No activity before lunch. Testing of low-power handheld jammers after lunch.

Test Area 3

No activity before lunch. Testing of mobile spoofing after lunch.

Table 1.1: Monday

Monday 2025-09-15	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
Start time:	11:00	11:00	11:00
08:00			
09:00			
10:00			
11:00	11:00-13:00 - 0.0.1 Mandatory morning briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)	11:00-13:00 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Test Area 1 (Site 1) Contact: Christian Skjetne (NPRA)	11:00-13:00 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Test Area 1 (Site 1) Contact: Christian Skjetne (NPRA)
12:00	Ongoing event. See above.	Ongoing event. See above.	Ongoing event. See above.
13:00	13:00-14:00 - 0.1.1 Grace period Comment: Lunch Contact: Christian Skjetne (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)
14:00	14:00-14:10 - 1.2.1 Jammer F8.1: 50 W CW: L1 Comment: 47dBm Jamming from Porcus Maior at Ramnan. Contact: Jørn Skorstad (Nkom) <hr/> 14:25-14:35 - 1.2.5 Jammer F8.1: 50 W CW: L1, G1, L2, L5, E6 Comment: 47dBm Jamming from Porcus Maior at Ramnan. Contact: Jørn Skorstad (Nkom) <hr/> 14:50-15:00 - 1.3.10 Jammer F8.1: 50W frequency sweep, Sweep rate: 100kHz, BW: 20MHz, Bands: L1 Comment: 47dBm Jamming from Porcus Maior at Ramnan. Contact: Jørn Skorstad (Nkom)	14:00-14:12 - 1.1.1 Jammer S1.1 Contact: Øystein Karlsen (NKOM) <hr/> 14:16-14:28 - 1.1.4 Jammer S2.1 Contact: Øystein Karlsen (NKOM) <hr/> 14:32-14:44 - 1.1.8 Jammer U1.1 Contact: Øystein Karlsen (NKOM) <hr/> 14:48-15:00 - 1.1.12 Jammer H1.1 Contact: Øystein Karlsen (NKOM)	14:00-14:15 - 2.6.1 Spoofing: Motorcade is stationary with dynamic spoofed position moving south Power: 0.001W Contact: Jahn Erik Røhme (NPRA) <hr/> 14:20-14:40 - 2.6.2 Spoofing: Motorcade moving with fixed spoofed position Power: 0.001W Contact: Jahn Erik Røhme (NPRA) <hr/> 14:50-15:10 - 2.6.3 Spoofing: Motorcade is driving while the spoofed position is moving south Power: 0.001W Contact: Jahn Erik Røhme (NPRA)

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Table 1.1: Monday (Continued)

Monday 2025-09-15	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
15:00	<p>15:15-15:25 - 1.3.11 Jammer F8.1: 50W frequency sweep, Sweep rate: 100kHz, BW: 20MHz, Bands: L1, G1, L2, L5, E6</p> <p>Comment: 47dBm Jamming from Porcus Maior at Ramnan. Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>15:40-15:50 - 1.4.5 Jammer F8.1: 50 W PRN: L1, Chiprate: 10 MHz</p> <p>Comment: 47dBm Jamming from Porcus Maior at Ramnan. Contact: Jørn Skorstad (Nkom)</p>	<p>15:04-15:16 - 1.1.13 Jammer H1.2</p> <p>Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>15:20-15:32 - 1.1.16 Jammer H3.1</p> <p>Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>15:36-15:48 - 1.1.18 Jammer H3.3</p> <p>Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>15:52-16:04 - 1.1.19 Jammer H4.1</p> <p>Contact: Øystein Karlsen (NKOM)</p>	<p>15:20-15:40 - 2.6.4 Spoofing: Motorcade is driving while the spoofed position is driving in the terrain next to the road</p> <p>Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</p> <hr/> <p>15:50-16:10 - 2.6.5 Spoofing: Motorcade moving from Crossroads northbound to Stave, while the spoofed position moves southbound towards Nordmela</p> <p>Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</p>
16:00	<p>16:05-16:15 - 1.4.6 Jammer F8.1: 50 W PRN: L1, G1, L2, L5, E6, Chiprate: 10 MHz</p> <p>Comment: 47dBm Jamming from Porcus Maior at Ramnan. Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>16:30-17:45 - 1.8.1 Jammer F8.1: PRN pyramid</p> <p>Power: 50W Comment: 47dBm Pyramid jamming from Porcus Maior at Ramnan. Adding jamming bands in sequence: E6, E5b, L5, G2, L2, B1I, G1, L1 Contact: Jørn Skorstad (Nkom)</p>	<p>16:08-16:20 - 1.1.20 Jammer H6.1</p> <p>Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>16:24-16:36 - 1.1.21 Jammer H6.2</p> <p>Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>16:40-16:52 - 1.1.22 Jammer H6.3</p> <p>Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>16:56-17:08 - 1.1.23 Jammer H6.4</p> <p>Contact: Øystein Karlsen (NKOM)</p>	<p>16:20-16:40 - 2.6.6 Spoofing: Motorcade moving with fixed spoofed position</p> <p>Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</p> <hr/> <p>16:50-17:10 - 2.6.7 Spoofing: Motorcade is driving from Crossroads to Stave, while the spoofed location is following the road at a higher speed 100km/h</p> <p>Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</p>

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Table 1.1: Monday (Continued)

Monday 2025-09-15	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
17:00		<div>17:12-17:24 - 1.1.26 Jammer H8.1 Contact: Øystein Karlsen (NKOM)</div> <div>17:28-17:40 - 1.1.27 Jammer F6.1 Contact: Øystein Karlsen (NKOM)</div> <div>17:44-17:56 - 1.1.29 Jammer H2.1 Contact: Øystein Karlsen (NKOM)</div>	<div>17:20-17:35 - 2.6.8 The motorcade is stationary at Stave. The clock will jump forward in time by 1 hour and 15 minutes Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div>
18:00	<div>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Contact: Christian Skjetne (NPRA)</div>	<div>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)</div>	<div>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)</div>
19:00			
20:00			
21:00			
22:00			

Tuesday

Test Area 1

Tuesday will be used for jamming and meaconing and unintentional RFI test. During the evening there will be a high power jamming running until 22:00.

Test Area 2

Test of multiple low-power handheld jammers in circular configuration. Relevant for mobile testing in car, drones and CRPA antennas.

Test Area 3

Testing of low-power handheld jammers inside and outside vehicles.

Table 2.1: Tuesday

Tuesday 2025-09-16	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
Start time:	08:00	08:00	08:00
08:00	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)
09:00	09:00-09:23 - 1.6.7 Jammer F8.1: 7.9 μW (-21dBm) to 50 W (47dBm) with 2 dB increments PRN: L1 Comment: Power ramping test from Porcus Maior at Ramnan Contact: Jørn Skorstad (Nkom) <hr/> 09:40-10:03 - 1.6.8 Jammer F8.1: 7.9 μW (-21dBm) to 50 W (47dBm) with 2 dB increments PRN: L1, G1, L2, L5, E6 Comment: Power ramping test from Porcus Maior at Ramnan Contact: Jørn Skorstad (Nkom)	09:00-09:10 - 1.19.1 3 jammers at 50 meters from center S1.1, S1.2 and S1.3 Contact: Øystein Karlsen (NKOM) <hr/> 09:16-09:26 - 1.19.2 3 jammers at 100 meters from center S1.1, S1.2 and S1.3 Contact: Øystein Karlsen (NKOM) <hr/> 09:32-09:42 - 1.19.3 3 jammers at 150 meters from center S1.1, S1.2 and S1.3 Contact: Øystein Karlsen (NKOM) <hr/> 09:48-09:58 - 1.19.4 3 jammers at 50 meters from center S2.1, S2.2 and S2.3 Contact: Øystein Karlsen (NKOM)	09:00-11:00 - 1.10.3 Vehicle starting in dual-band denied environment Power: 6.31W Comment: Jammers available for testing: H1.6,H1.6,H3.2,F6.1 Contact: Jahn Erik Røhme (NPRA)

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Table 2.1: Tuesday (Continued)

Tuesday 2025-09-16	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
10:00	<p>10:20-10:30 - 3.1.3 Meaconing with F1.1: RX1 at 10 W Comment: 40dBm meaconing from Porcellus at Ramnan Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>10:45-11:00 - 3.1.4 Meaconing with F1.1: RX1 at 10 W with initial jamming Comment: 10 minutes of 40dBm meaconing from Porcellus preceded by 5 minutes of PRN jamming from Porcus Maior at Ramnan Contact: Jørn Skorstad (Nkom)</p>	<p>10:04-10:14 - 1.19.5 3 jammers at 100 meters from center S2.1, S2.2 and S2.3 Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>10:20-10:30 - 1.19.6 3 jammers at 150 meters from center S2.1, S2.2 and S2.3 Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>10:36-10:46 - 1.19.7 3 jammers at 50 meters from center U1.1, U1.2 and U1.3 Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>10:52-11:02 - 1.19.8 3 jammers at 100 meters from center U1.1, U1.2 and U1.3 Contact: Øystein Karlsen (NKOM)</p>	Ongoing event. See above.
11:00	<p>11:15-11:49 - 3.3.1 Meaconing with F1.1: RX1 with ramping power Power: 10W Comment: Ramping up meaconing signal power from 0dBm to 40dBm with Porcellus at Ramnan Contact: Jørn Skorstad (Nkom)</p>	<p>11:08-11:18 - 1.19.9 3 jammers at 150 meters from center U1.1, U1.2 and U1.3 Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>11:24-11:34 - 1.19.10 3 jammers at 50 meters from center H6.4, H6.5 and H6.6 Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>11:40-11:50 - 1.19.11 3 jammers at 100 meters from center H6.4, H6.5 and H6.6 Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>11:56-12:06 - 1.19.12 3 jammers at 150 meters from center H6.4, H6.5 and H6.6 Contact: Øystein Karlsen (NKOM)</p>	<p>11:00-13:00 - 1.10.2 Driving while passing a parked car with multi-band jammer Power: 1W Comment: Jammers available for testing: H3.2,H4.1,H3.3,H8.1 Contact: Jahn Erik Røhme (NPRA)</p>

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Table 2.1: Tuesday (Continued)

Tuesday 2025-09-16	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
12:00	12:05-12:41 - 3.2.7 Meaconing with F1.1: RX1 and RX2 at 10 W alternating with different switching frequencies. Comment: 40dBm Meaconing from Porcellus at Ramnan. Two-minute intervals with more and more rapid switching between receiving antennas RX1 and RX2. Contact: Jørn Skorstad (Nkom)	12:12-12:22 - 1.19.13 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Contact: Øystein Karlsen (NKOM) <hr/> 12:28-12:38 - 1.19.14 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Contact: Øystein Karlsen (NKOM) <hr/> 12:44-12:54 - 1.19.15 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Contact: Øystein Karlsen (NKOM)	Ongoing event. See above.
13:00	13:00-14:00 - 0.1.1 Grace period Comment: Lunch Contact: Christian Skjetne (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)
14:00	14:00-14:45 - 3.2.10 Meaconing with F1.1: RX1 and RX2 at 10 W alternating with different switching frequencies and with jamming Comment: 40dBm Meaconing from Porcellus at Ramnan. More and more rapid switching between receiving antennas RX1 and RX2. Accompanied by jamming on L5, G1 and E6 from Porcus Maior. Contact: Jørn Skorstad (Nkom)	14:30-14:42 - 1.20.1 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM) <hr/> 14:48-15:00 - 1.20.2 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)	14:00-16:00 - 1.11.11 Motorcade while jammer vehicle is in the middle of the motorcade Power: 1W Comment: Jammers available for testing: H6.1,H3.3 Contact: Jahn Erik Røhme (NPRA)

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Table 2.1: Tuesday (Continued)

Tuesday 2025-09-16	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
15:00	<div><div>15:10-15:25 - 1.18.5 Jammer F8.1: CW signal drift: 1545 to 1620 MHz, 15 minutes sweep time Comment: 47dBm Out of band jamming from Porcus Maior at Ramnan Contact: Jørn Skorstad (Nkom)</div><div>15:35-15:50 - 1.18.7 Jammer F8.1: CW signal drift: 1620 to 1545 MHz, 15 minutes sweep time Comment: 47dBm Out of band jamming from Porcus Maior at Ramnan Contact: Jørn Skorstad (Nkom)</div></div>	<div><div>15:06-15:18 - 1.20.3 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</div><div>15:24-15:36 - 1.20.4 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</div><div>15:42-15:54 - 1.20.5 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</div></div>	Ongoing event. See above.

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Table 2.1: Tuesday (Continued)

Tuesday 2025-09-16	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
16:00	<div><div>16:00-16:15 - 1.18.13 Jammer F8.1: 50 W drift: 1150 to 1300 MHz, with CW and sweep time of 15 minutes Comment: 47dBm Out of band jamming from Porcus Maior at Ramnan Contact: Jørn Skorstad (Nkom)</div><div>16:25-16:40 - 1.18.15 Jammer F8.1: 50 W drift: 1300 to 1150 MHz, with CW and sweep time of 15 minutes Comment: 47dBm Out of band jamming from Porcus Maior at Ramnan Contact: Jørn Skorstad (Nkom)</div></div>	<div><div>16:00-16:12 - 1.20.6 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</div><div>16:18-16:30 - 1.20.7 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</div><div>16:36-16:48 - 1.20.8 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</div><div>16:54-17:06 - 1.20.9 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</div></div>	<div><div>16:00-18:00 - 1.11.4 Driving with dual-band jammer in vehicle overtaking the test vehicle Power: 6.31W Comment: Jammers available for testing: H1.6,H3.3,H4.1,F6.1 Contact: Jahn Erik Røhme (NPRA)</div></div>

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Table 2.1: Tuesday (Continued)

Tuesday 2025-09-16	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
17:00	<p>17:00-17:20 - 3.4.1 Meaconing with F1.1: RX1 and spoofing from M1.1 Winnie the Spoof Comment: 40dBm Meaconing from Porcellus at Ramnan and spoofing from the cemetery at the same time. Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>17:40-18:00 - 3.4.2 Meaconing with F1.1: RX1 and spoofing from M1.1 Winnie the Spoof Comment: 40dBm Meaconing from Porcellus at Ramnan and spoofing from the cemetery at the same time. Contact: Jørn Skorstad (Nkom)</p>	<p>17:12-17:24 - 1.20.10 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>17:30-17:40 - 1.20.11 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</p> <hr/> <p>17:46-17:58 - 1.20.12 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 3W Comment: 30dBm from each direction, A, B and C Contact: Øystein Karlsen (NKOM)</p>	Ongoing event. See above.
18:00	<p>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Contact: Christian Skjetne (NPRA)</p>	<p>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Christian Skjetne (NPRA)</p>	<p>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)</p>
19:00	<p>19:00-22:00 - 1.16.5 High Power PRN jamming from two locations: L1, G1, L2, L5, E6 Power: 100W Comment: One hour of 50dBm jamming from Porcus Maior at Ramnan, then one hour jamming from both Porcus Maior and Winnie the Spoof at the cemetery, then one hour of jamming from Winnie the Spoof. Contact: Jørn Skorstad (Nkom)</p>		
20:00	Ongoing event. See above.		
21:00	Ongoing event. See above.		
22:00			

Wednesday

Test Area 1

Wednesday will be used for position and EGNOS spoofing. During the evening there will be a long period with drifting position and time spoofing until 22:00.

Test Area 2

Test of stationary coherent spoofing with circle of jammers. Relevant for mobile testing in car, drones and CRPA antennas.

Test Area 3

Testing of low-power handheld jammers inside and outside vehicles.

Table 3.1: Wednesday

Wednesday 2025-09-17	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
Start time:	08:00	08:00	08:00
08:00	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Test Area 1 (Site 1) Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)
09:00	09:00-09:40 - 2.1.1 Large position and time jump, with power ramp Power: 0.316W Contact: Jørn Skorstad (Nkom)	09:00-09:40 - 2.10.1 Spoofing route GPS L1 and Galileo E1 only Power: 0.001W Comment: Spoofing route that start at LOK2-ORIG, and goes out forming a spoofing circle above position A150, B150 and C150. Spoofing signal will perform power ramp from uW to mW during the first 30 minutes of the test. Signals: GPS L1 C/A. Galileo E1. No initial jamming. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM) <hr/> 09:50-10:55 - 2.10.2 Circle of 3 stationary jammers, L1, L2 and spoofing route GPS L1 and Galileo E1 only Power: 3W Comment: Jamming from A50, B50 and C50, with jammer H1.1, H1.4 and H1.5, L1, L2, CHIRP. HIGH PWR. The Jammers are connected to RHCP antennas to boost the power. 15 minutes of initial jamming first. Then spoofing starts, same spoofing route as test 2.10.1 Contact: Øystein Karlsen (NKOM)	09:00-11:00 - 1.10.3 Vehicle starting in dual-band denied environment Power: 1W Comment: Jammers available for testing: H3.2,H4.1,H6.1,H6.3 Contact: Jahn Erik Røhme (NPRA)

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Table 3.1: Wednesday (Continued)

Wednesday 2025-09-17	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
10:00	<p>10:00-10:15 - 2.1.3 Large position and time jump. Galileo E1 only Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>10:20-10:35 - 2.1.2 Large position and time jump. GPS L1 C/A only Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>10:40-10:55 - 2.1.5 Large position and time jump. GPS and Galileo. Power: 0.316W Contact: Jørn Skorstad (Nkom)</p>		Ongoing event. See above.
11:00	<p>11:25-11:40 - 2.1.9 Simulated driving (route 1). GPS L1 C/A and Galileo E1, with initial jamming Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>11:45-12:00 - 2.1.10 Simulated driving (route 1), with initial jamming Power: 0.316W Contact: Jørn Skorstad (Nkom)</p>	<p>11:05-12:00 - 2.10.3 Circle of 3 stationary jammers, 2 moving jammers L1, L2 and spoofing route GPS L1 and Galileo E1 only Power: 4W Comment: Jamming from A50, B50 and C50, with jammer H1.1, H1.4 and H1.5, L1, L2, CHIRP. HIGH PWR. The Jammers are connected to RHCP antennas to boost the power. Two additional mobile jammers will be added H1.6 and H1.7 with L1, L2 NB, HIGH PWR. 15 minutes of initial jamming first. Then spoofing starts, same spoofing route as test 2.10.1 Contact: Øystein Karlsen (NKOM)</p>	<p>11:00-13:00 - 1.10.2 Driving while passing a parked car with multi-band jammer Power: 6.31W Comment: Jammers available for testing: H3.3,H4.1,H8.1,F6.1 Contact: Jahn Erik Røhme (NPRA)</p>

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Table 3.1: Wednesday (Continued)

Wednesday 2025-09-17	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
12:00	<p>12:30-12:40 - 2.8.1 EGNOS with "Do Not Use GPS" commands Power: 1W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>12:45-13:00 - 2.8.2 EGNOS with "Do Not Use GPS" commands and normali spoofing Power: 1W Contact: Jørn Skorstad (Nkom)</p>	<p>12:10-13:05 - 2.10.4 Circle of 3 stationary jammers, 5 moving jammers and spoofing route GPS L1 and Galileo E1 only Power: 5W Comment: Jamming from A50, B50 and C50, with jammer H1.1, H1.4 and H1.5, L1, L2, CHIRP. HIGH PWR. The Jammers are connected to RHCP antennas to boost the power. Five additional mobile jammers will be added H1.6 and H1.7 with L1, L2 NB, HIGH PWR, and H6.3, H6.4 and H6.5, L1, L2. 15 minutes of initial jamming first. Then spoofing starts, same spoofing route as test 2.10.1. Contact: Øystein Karlsen (NKOM)</p>	Ongoing event. See above.
13:00	<p>13:00-14:00 - 0.1.1 Grace period Comment: Lunch Contact: Christian Skjetne (NPRA)</p>	<p>13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)</p>	<p>13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)</p>
14:00	<p>14:00-14:15 - 2.2.3 Position jump Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>14:20-14:35 - 2.2.5 Small position jump Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>14:40-14:55 - 2.2.2 Small position jump, with initial and continuous jamming Power: 0.316W Contact: Jørn Skorstad (Nkom)</p>	<p>14:10-14:50 - 2.10.1 Spoofing route GPS L1 and Galileo E1 only Power: 0.001W Comment: Spoofing route that start at LOK2-ORIG, and goes out forming a spoofing circle above position A150, B150 and C150. Spoofing signal will perform power ramp from uW to mW during the first 30 minutes of the test. Signals: GPS L1 C/A. Galileo E1. No initial jamming. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM)</p>	<p>14:00-16:00 - 1.11.11 Motorcade while jammer vehicle is in the middle of the motorcade Power: 6.31W Comment: Jammers available for testing: H3.3,H6.1,H8.1,F6.1 Contact: Jahn Erik Røhme (NPRA)</p>

Continued on next page

Table 3.1: Wednesday (Continued)

Wednesday 2025-09-17	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
15:00	<p>15:25-15:35 - 2.3.8 Simulated driving (route 1). Galileo only Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>15:40-15:50 - 2.3.5 Simulated driving (route 1). GPS only Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>15:55-16:05 - 2.3.10 Simulated driving (route 1) Power: 0.316W Contact: Jørn Skorstad (Nkom)</p>	<p>15:00-15:55 - 2.10.2 Circle of 3 stationary jammers, L1, L2 and spoofing route GPS L1 and Galileo E1 only Power: 3W Comment: Jamming from A50, B50 and C50, with jammer H1.1, H1.4 and H1.5, L1, L2, CHIRP. HIGH PWR. The Jammers are connected to RHCP antennas to boost the power. 15 minutes of initial jamming first. Then spoofing starts, same spoofing route as test 2.10.1 Contact: Øystein Karlsen (NKOM)</p>	Ongoing event. See above.
16:00	<p>16:10-16:25 - 2.3.11 Simulated driving (route 1) with initial and continuous jamming. Power: 0.316W Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>16:55-17:05 - 2.3.15 Flying (route 2) - "helicopter scenario" Power: 0.316W Comment: Actual test not decided yet, will depend on helicopters need Contact: Jørn Skorstad (Nkom)</p>	<p>16:05-17:00 - 2.10.3 Circle of 3 stationary jammers, 2 moving jammers L1, L2 and spoofing route GPS L1 and Galileo E1 only Power: 4W Comment: Jamming from A50, B50 and C50, with jammer H1.1, H1.4 and H1.5, L1, L2, CHIRP. HIGH PWR. The Jammers are connected to RHCP antennas to boost the power. Two additional mobile jammers will be added H1.6 and H1.7 with L1, L2 NB, HIGH PWR. 15 minutes of initial jamming first. Then spoofing starts, same spoofing route as test 2.10.1 Contact: Øystein Karlsen (NKOM)</p>	<p>16:00-18:00 - 1.11.4 Driving with dual-band jammer in vehicle overtaking the test vehicle Power: 6.31W Comment: Jammers available for testing: H3.3,H6.1,H8.1,F6.1 Contact: Jahn Erik Røhme (NPRA)</p>

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Table 3.1: Wednesday (Continued)

Wednesday 2025-09-17	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
17:00	<p>17:10-17:20 - 2.3.12 Flying (route 4) - "drone scenario" GPS L1 C/A only Power: 0.316W Comment: Actual route not yet decided Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>17:30-17:40 - 2.3.13 Flying (route 4) - "drone scenario" Power: 0.316W Comment: Actual route not yet decided Contact: Jørn Skorstad (Nkom)</p> <hr/> <p>17:45-18:00 - 2.3.15 Flying (route 2) - "helicopter scenario" Power: 0.316W Comment: Actual test not decided yet, will depend on helicopters need Contact: Jørn Skorstad (Nkom)</p>	<p>17:10-18:05 - 2.10.4 Circle of 3 stationary jammers, 5 moving jammers and spoofing route GPS L1 and Galileo E1 only Power: 5W Comment: Jamming from A50, B50 and C50, with jammer H1.1, H1.4 and H1.5, L1, L2, CHIRP. HIGH PWR. The Jammers are connected to RHCP antennas to boost the power. Five additional mobile jammers will be added H1.6 and H1.7 with L1, L2 NB, HIGH PWR, and H6.3, H6.4 and H6.5, L1, L2. 15 minutes of initial jamming first. Then spoofing starts, same spoofing route as test 2.10.1 Contact: Øystein Karlsen (NKOM)</p>	Ongoing event. See above.
18:00	<p>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)</p>	<p>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)</p>	<p>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)</p>
19:00	<p>19:00-22:00 - 2.3.17 Longer period with drifting position and time spoofing Power: 0.316W Comment: 2.3.16 or 2.3.17 Contact: Jørn Skorstad (Nkom)</p>		
20:00	Ongoing event. See above.		
21:00	Ongoing event. See above.		
22:00			

Thursday

Test Area 1

Thursday will be used for time spoofing.

Test Area 2

Test of multiple low-power handheld jammers, and Jammer onbaord a drone. Relevant for mobile testing in car, drones and CRPA antennas.

Test Area 3

Testing of mobile spoofing. Repetitions of tests from Monday except the last test of the day.

Table 4.1: Thursday

Thursday 2025-09-18	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
Start time:	08:00	08:00	08:00
08:00	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Test Area 1 (Site 1) Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)
09:00	09:00-09:30 - 2.5.2 Time offset 15 minutes from real time, with power ramp Power: 0.0316W Contact: Jørn Skorstad (Nkom) <hr/> 09:55-10:10 - 2.4.3 Time offset -3 minutes from real time, with power jump Power: 0.0316W Contact: Jørn Skorstad (Nkom)	09:00-10:00 - 1.23.1 Jammer S1.1 with 10dB gain at 50 meters above ground Power: 0.316W Comment: Drone with jammer onboard. Dependent on weather conditions Contact: Øystein Karlsen (NKOM)	09:00-09:15 - 2.6.1 Spoofing: Motorcade is stationary with dynamic spoofed position moving south Power: 0.001W Contact: Jahn Erik Røhme (NPRA) <hr/> 09:20-09:40 - 2.6.2 Spoofing: Motorcade moving with fixed spoofed position Power: 0.001W Contact: Jahn Erik Røhme (NPRA) <hr/> 09:50-10:10 - 2.6.3 Spoofing: Motorcade is driving while the spoofed position is moving south Power: 0.001W Contact: Jahn Erik Røhme (NPRA)
10:00	10:20-10:35 - 2.4.12 Static + Pseudorange error Power: 0.0316W Contact: Jørn Skorstad (Nkom) <hr/> 10:50-11:05 - 2.4.13 Static + Pseudorange error, with initial and continous jamming Power: 0.001W Contact: Jørn Skorstad (Nkom)	10:00-11:00 - 1.23.1 Jammer S1.1 with 10dB gain at 50 meters above ground Power: 0.316W Comment: Drone with jammer onboard. Dependent on weather conditions Contact: Øystein Karlsen (NKOM)	10:20-10:40 - 2.6.4 Spoofing: Motorcade is driving while the spoofed position is driving in the terrain next to the road Power: 0.001W Contact: Jahn Erik Røhme (NPRA) <hr/> 10:50-11:10 - 2.6.5 Spoofing: Motorcade moving from Crossroads northbound to Stave, while the spoofed position moves southbound towards Nordmela Power: 0.001W Contact: Jahn Erik Røhme (NPRA)

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Table 4.1: Thursday (Continued)

Thursday 2025-09-18	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
11:00	11:35-12:00 - 2.5.22 Static + Nav data manipulation (clock/frequency related), with initial and continuous jamming. Power: 0.001W Contact: Jørn Skorstad (Nkom)	11:00-12:00 - 1.23.2 Jammer S1.1 with 10dB gain at 100 meters above ground Power: 0.316W Comment: Drone with jammer onboard. Dependent on weather conditions Contact: Øystein Karlsen (NKOM)	11:20-11:40 - 2.6.6 Spoofing: Motorcade moving with fixed spoofed position Power: 0.001W Contact: Jahn Erik Røhme (NPRA) <hr/> 11:50-12:10 - 2.6.7 Spoofing: Motorcade is driving from Crossroads to Stave, while the spoofed location is following the road at a higher speed 100km/h Power: 0.001W Contact: Jahn Erik Røhme (NPRA)
12:00	12:25-13:00 - 2.5.25 Static + UTC-parameter nav. data manipulation (adding leap seconds), with initial and continuous jamming Power: 0.001W Contact: Jørn Skorstad (Nkom)	12:00-13:00 - 1.23.2 Jammer S1.1 with 10dB gain at 100 meters above ground Power: 0.316W Comment: Drone with jammer onboard. Dependent on weather conditions Contact: Øystein Karlsen (NKOM)	12:20-12:35 - 2.6.8 The motorcade is stationary at Stave. The clock will jump forward in time by 1 hour and 15 minutes Power: 0.001W Contact: Jahn Erik Røhme (NPRA)
13:00	13:00-14:00 - 0.1.1 Grace period Comment: Lunch Contact: Christian Skjetne (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Jahn Erik Røhme (NPRA)

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Table 4.1: Thursday (Continued)

Thursday			
2025-09-18	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
14:00	<div><div>14:00-14:15 - 2.5.5 Time offset 15 minutes from real time. Galileo E1 Power: 0.0316W Contact: Jørn Skorstad (Nkom)</div><div>14:20-14:35 - 2.5.4 Time offset 15 minutes from real time. GPS L1 C/A Power: 0.0316W Contact: Jørn Skorstad (Nkom)</div><div>14:40-14:55 - 2.5.6 Time offset 15 minutes from real time Power: 1e-05W Contact: Jørn Skorstad (Nkom)</div></div>	<div><div>14:00-15:00 - 0.3.1 Ad hoc test Contact: Øystein Karlsen (NKOM)</div></div>	<div><div>14:00-14:15 - 2.6.1 Spoofing: Motorcade is stationary with dynamic spoofed position moving south Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div><div>14:20-14:40 - 2.6.2 Spoofing: Motorcade moving with fixed spoofed position Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div><div>14:50-15:10 - 2.6.3 Spoofing: Motorcade is driving while the spoofed position is moving south Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div></div>
15:00	<div><div>15:25-15:40 - 2.5.13 Static + Pseudorange error. GPS L1 and Galileo E1 only Power: 0.001W Contact: Jørn Skorstad (Nkom)</div><div>15:45-16:00 - 2.5.15 Static + Pseudorange error Power: 1e-05W Contact: Jørn Skorstad (Nkom)</div></div>	<div><div>15:00-16:00 - 1.22.1 12 jammers at 50 meters from center Comment: U1.1, U1.2, U1.3, S2.1, S2.2, S2.3, H1.1, H1.4, H1.5, H6.4, H6.5, H6.6 Contact: Øystein Karlsen (NKOM)</div></div>	<div><div>15:20-15:40 - 2.6.4 Spoofing: Motorcade is driving while the spoofed position is driving in the terrain next to the road Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div><div>15:50-16:10 - 2.6.5 Spoofing: Motorcade moving from Crossroads northbound to Stave, while the spoofed position moves southbound towards Nordmela Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div></div>

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Table 4.1: Thursday (Continued)

Thursday			
2025-09-18	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
16:00	<div><div>16:15-16:40 - 2.5.16 Static + Pseudorange error, with initial and continuous jamming Power: 1e-05W Contact: Jørn Skorstad (Nkom)</div><div>16:55-17:20 - 2.5.26 Static + UTC-parameter nav. data manipulation (removing leap seconds). GPS L1 C/A Power: 1e-05W Contact: Jørn Skorstad (Nkom)</div></div>	<div><div>16:05-16:15 - 1.1.1 Jammer S1.1 Contact: Øystein Karlsen (NKOM)</div><div>16:20-16:30 - 1.1.4 Jammer S2.1 Contact: Øystein Karlsen (NKOM)</div><div>16:35-16:45 - 1.1.8 Jammer U1.1 Contact: Øystein Karlsen (NKOM)</div><div>16:50-17:00 - 1.1.12 Jammer H1.1 Contact: Øystein Karlsen (NKOM)</div></div>	<div><div>16:20-16:40 - 2.6.6 Spoofing: Motorcade moving with fixed spoofed position Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div><div>16:50-17:10 - 2.6.7 Spoofing: Motorcade is driving from Crossroads to Stave, while the spoofed location is following the road at a higher speed 100km/h Power: 0.001W Contact: Jahn Erik Røhme (NPRA)</div></div>
17:00	<div><div>17:30-18:00 - 2.5.28 Static + UTC-parameter nav. data manipulation (removing leap seconds), with initial and continuous jamming Power: 1e-05W Comment: 2.5.28 or 2.5.27 (with or without initial jamming) Contact: Jørn Skorstad (Nkom)</div></div>	<div><div>17:05-17:15 - 1.1.18 Jammer H3.3 Contact: Øystein Karlsen (NKOM)</div><div>17:20-17:30 - 1.1.19 Jammer H4.1 Contact: Øystein Karlsen (NKOM)</div><div>17:35-17:45 - 1.1.22 Jammer H6.3 Contact: Øystein Karlsen (NKOM)</div></div>	<div><div>17:20-17:35 - 2.6.9 The motorcade is stationary at Stave. The clock will jump forward in time by 13 years (to the year 2038) Power: 0.001W Comment: Warning: This test could 'brick' some equipment. Contact: Jahn Erik Røhme (NPRA)</div></div>
18:00	<div><div>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)</div></div>	<div><div>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)</div></div>	<div><div>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)</div></div>
19:00			
20:00			
21:00			
22:00			

Friday

Test Area 1

Friday will be used for time spoofing and repetitions of previous tests. Time after lunch will be used for tearing down and packing up equipment.

Test Area 2

There will be no testing on this site on Friday.

Test Area 3

There will be no testing on this site on Friday.

Table 5.1: Friday

Friday 2025-09-19	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
Start time:	08:00	09:00	09:00
08:00	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)		
09:00	09:00-09:10 - 0.3.1 Ad hoc test Power: 0.316W Comment: L2 only spoofing Contact: Jørn Skorstad (Nkom) <hr/> 09:20-09:40 - 0.3.1 Ad hoc test Power: 10W Comment: 3.1.3 + 2.1.2, meaconing (10 W) + spoofing (20 dBm) Contact: Jørn Skorstad (Nkom) <hr/> 09:50-10:00 - 3.2.5 Meaconing with F1.1: RX1 and RX2 at 10 W alternating with breaks Power: 10W Comment: Only using RX1 Contact: Jørn Skorstad (Nkom)	09:00-16:00 - 0.1.1 Grace period Comment: SITE IS CLOSED! Contact: Øystein Karlsen (NKOM)	09:00-16:00 - 0.1.1 Grace period Comment: SITE IS CLOSED! Contact: Christian Skjetne (NPRA)
10:00	10:10-10:33 - 1.6.4 Jammer F8.1: 0.2 μW (-37dBm) to 50 W (47dBm) with 2 dB increments PRN: L1, G1, L2, L5 Power: 50W Comment: 20 seconds per step, power ramp (up and down) from -21 (to 47) dBm Contact: Jørn Skorstad (Nkom) <hr/> 10:50-11:10 - 2.7.12 Static + Time manipulation (2 years forwards), with power ramp Power: 0.0316W Contact: Jørn Skorstad (Nkom)	Ongoing event. See above.	Ongoing event. See above.

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Table 5.1: Friday (Continued)

Friday 2025-09-19	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
11:00	11:30-11:50 - 2.7.16 Static + Time manipulation (April 2019), with initial and continuous jamming Power: 0.0316W Contact: Jørn Skorstad (Nkom)	Ongoing event. See above.	Ongoing event. See above.
12:00	12:00-12:22 - 0.3.1 Ad hoc test Power: 0.0316W Comment: Spoofing Contact: Jørn Skorstad (Nkom) <hr/> 12:30-12:40 - 0.3.1 Ad hoc test Power: 0.0316W Comment: Spoofing Contact: Jørn Skorstad (Nkom) <hr/> 12:50-13:00 - 0.3.1 Ad hoc test Power: 0.316W Comment: Jamming of L1, G1, BII from S (the spoofing system) Contact: Jørn Skorstad (Nkom)	Ongoing event. See above.	Ongoing event. See above.
13:00	13:00-14:00 - 0.1.1 Grace period Comment: Lunch Contact: Christian Skjetne (NPRA)	Ongoing event. See above.	Ongoing event. See above.
14:00	14:00-14:30 - 0.0.2 Mandatory afternoon (de)briefing Comment: Summary briefing and closing of event Contact: Christian Skjetne (NPRA)	Ongoing event. See above.	Ongoing event. See above.
15:00		Ongoing event. See above.	Ongoing event. See above.
16:00			
17:00			

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Table 5.1: Friday (Continued)

Friday			
2025-09-19	Test Area 1(1)	Test Area 2(2)	Test Area 3(3)
18:00			
19:00			
20:00			
21:00			
22:00			