



Jammertest 2024 Transmission Plan

Jammertest Consortium

2025-04-29
14:14:58

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Monday

Location 1 Bleik

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.

Location 2 Grunnvatn

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

∞ **Location 3 Motorcade**

No activity before lunch. Testing of low-power handheld jammers inside and outside vehicles after lunch.

Table 1.1: Monday

Monday 2024-09-09	Bleik(1)	Grunnvatn(2)	Motorcade(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 Bleik (Site 1) Contact: Christian Skjetne (NPRA)	11:00-13:00 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)
12:00			
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 @ Bleik (Site 1) Contact: Christian Skjetne (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Bleik (Site 1) Contact: Christian Skjetne (NPRA)
14:00	14:00-14:10 - 1.2.1 Jammer F8.1 "Porcus Major": 50 W CW: L1 Power: 50W Contact: Nicolai Gerrard (NKOM) <hr/> 14:20-14:30 - 1.2.4 Jammer F8.1 "Porcus Major": 50 W CW: L1, G1, L2, L5 Power: 50W Contact: Nicolai Gerrard (NKOM) <hr/> 14:40-14:50 - 1.3.5 Jammer F8.1 "Porcus Major": 50 W sweep: L1, sweep rate: 1 kHz, BW: 6 MHz Power: 50W Contact: Nicolai Gerrard (NKOM)	14:00-14:12 - 1.1.1 Jammer S1.1 Power: 0.0316W Contact: Øystein Karlsen (NKOM) <hr/> 14:16-14:28 - 1.1.4 Jammer S2.1 Power: 0.1W 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 Power: 0.1W Contact: Øystein Karlsen (NKOM)	

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Table 1.1: Monday (Continued)

Monday 2024-09-09	Bleik(1)	Grunnvatn(2)	Motorcade(3)
15:00	<div>15:00-15:10 - 1.3.8 Jammer F8.1 "Porcus Major": 50 W sweep: L1, G1, L2, L5, sweep rate: 1 kHz, BW: 6 MHz Power: 50W Contact: Nicolai Gerrard (NKOM)</div> <div>15:20-15:30 - 1.4.1 Jammer F8.1 "Porcus Major": 50 W PRN: L1, Chiprate: 3 MHz Power: 50W Contact: Nicolai Gerrard (NKOM)</div> <div>15:40-15:50 - 1.4.4 Jammer F8.1 "Porcus Major": 50 W PRN: L1, G1, L2, L5, Chiprate: 3 MHz Power: 50W Contact: Nicolai Gerrard (NKOM)</div>	<div>15:04-15:16 - 1.1.13 Jammer H1.2 Power: 0.0631W Contact: Øystein Karlsen (NKOM)</div> <div>15:20-15:32 - 1.1.16 Jammer H3.1 Power: 0.1W Contact: Øystein Karlsen (NKOM)</div> <div>15:36-15:48 - 1.1.18 Jammer H3.3 Power: 1W Contact: Øystein Karlsen (NKOM)</div> <div>15:52-16:04 - 1.1.19 Jammer H4.1 Power: 0.631W Contact: Øystein Karlsen (NKOM)</div>	<div>15:00-16:15 - 1.11.7 Driving with multi-band jammer in vehicle in front of the test vehicle Power: 1.58W Contact: Jahn Erik Røhme (NPRA)</div>

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Table 1.1: Monday (Continued)

Monday 2024-09-09	Bleik(1)	Grunnvatn(2)	Motorcade(3)
16:00	<div><div>16:00-16:14 - 1.6.1 Power ramping with Jammer F8.1 ”Porcus Major”: 0.2 μW (-37dBm) to 50 W (47dBm) with 2 dB increments PRN: L1 Power: 50W Contact: Nicolai Gerrard (NKOM)</div><div>16:25-16:39 - 1.6.4 Power ramping with Jammer F8.1 ”Porcus Major”: 0.2 μW (-37dBm) to 50 W (47dBm) with 2 dB increments PRN: L1, G1, L2, L5 Power: 50W Contact: Nicolai Gerrard (NKOM)</div><div>16:50-18:05 - 1.8.1 Jammer F8.1 ”Porcus Major”: 50 W PRN pyramid: E6, E5b, L5, G2, L2, B1I, G1, L1 Power: 50W Contact: Nicolai Gerrard (NKOM)</div></div>	<div><div>16:08-16:20 - 1.1.20 Jammer H6.1 Power: 0.631W Contact: Øystein Karlsen (NKOM)</div><div>16:24-16:36 - 1.1.21 Jammer H6.2 Power: 1W Contact: Øystein Karlsen (NKOM)</div><div>16:40-16:52 - 1.1.22 Jammer H6.3 Power: 1W Contact: Øystein Karlsen (NKOM)</div><div>16:56-17:08 - 1.1.23 Jammer H6.4 Power: 1W Contact: Øystein Karlsen (NKOM)</div></div>	<div>16:30-17:45 - 1.11.8 Driving with multi-band jammer in vehicle behind the test vehicle Power: 1.58W Contact: Jahn Erik Røhme (NPRA)</div>
17:00		<div><div>17:12-17:24 - 1.1.26 Jammer H8.1 Power: 0.631W Contact: Øystein Karlsen (NKOM)</div><div>17:28-17:40 - 1.1.27 Jammer F6.1 Power: 6.31W Contact: Øystein Karlsen (NKOM)</div><div>17:44-17:56 - 1.1.29 Jammer H2.1 Contact: Øystein Karlsen (NKOM)</div></div>	

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Table 1.1: Monday (Continued)

Monday 2024-09-09	Bleik(1)	Grunnvatn(2)	Motorcade(3)
18:00	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Contact: Christian Skjetne (NPRA)	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)
19:00			
20:00			
21:00			
22:00			

Tuesday

Location 1 Bleik

Tuesday will be used for meaoning and unintentional RFI test. During the evening there will be very high power jamming running untill 22:00.

Location 2 Grunnvatn

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

Location 3 Motorcade

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

Table 2.1: Tuesday

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(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 Bleik (Site 1) Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)
09:00	09:00-09:05 - 3.1.1 Meacon F1.1 "Porcellus": RX1 at 1 W Power: 1W Contact: Nicolai Gerrard (NKOM) <hr/> 09:15-09:25 - 3.1.2 Meacon F1.1 "Porcellus": RX1 at 1 W with initial jamming Power: 1W Contact: Nicolai Gerrard (NKOM) <hr/> 09:35-09:40 - 3.1.3 Meacon F1.1 "Porcellus": RX1 at 10 W Power: 10W Contact: Nicolai Gerrard (NKOM) <hr/> 09:50-10:00 - 3.1.4 Meacon F1.1 "Porcellus": RX1 at 10 W with initial jamming Power: 10W Contact: Nicolai Gerrard (NKOM)	09:00-09:10 - 1.19.1 3 jammers at 50 meters from center S1.1, S1.2 and S1.3 Power: 0.171W 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 Power: 0.171W 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 Power: 0.171W 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 Power: 1.26W Contact: Øystein Karlsen (NKOM)	

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Table 2.1: Tuesday (Continued)

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(3)
10:00	<div><div>10:10-10:15 - 3.1.5 Meacon F1.1 "Porcellus": RX2 at 10 W Power: 10W Contact: Nicolai Gerrard (NKOM)</div><div>10:25-10:45 - 3.2.3 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W turned on and off at different times Power: 10W Contact: Nicolai Gerrard (NKOM)</div><div>10:55-11:05 - 3.2.4 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating Power: 10W Contact: Nicolai Gerrard (NKOM)</div></div>	<div><div>10:04-10:14 - 1.19.5 3 jammers at 100 meters from center S2.1, S2.2 and S2.3 Power: 1.26W Contact: Øystein Karlsen (NKOM)</div><div>10:20-10:30 - 1.19.6 3 jammers at 150 meters from center S2.1, S2.2 and S2.3 Power: 1.26W Contact: Øystein Karlsen (NKOM)</div><div>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)</div><div>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)</div></div>	<div><div>10:00-11:00 - 1.10.6 Driving while passing three consecutive parked cars with multi-band jammer Power: 1W Contact: Jahn Erik Røhme (NPRA)</div></div>

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Table 2.1: Tuesday (Continued)

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(3)
11:00	11:15-11:35 - 3.2.5 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating with breaks Power: 10W Contact: Nicolai Gerrard (NKOM)	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)	11:00-12:00 - 1.10.6 Driving while passing three consecutive parked cars with multi-band jammer Power: 1W Contact: Jahn Erik Røhme (NPRA)
	11:45-12:01 - 3.2.6 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating with decreasing durations without breaks Power: 10W Contact: Nicolai Gerrard (NKOM)	11:24-11:34 - 1.19.10 3 jammers at 50 meters from center H6.4, H6.5 and H6.6 Power: 1.58W Contact: Øystein Karlsen (NKOM)	
		11:40-11:50 - 1.19.11 3 jammers at 100 meters from center H6.4, H6.5 and H6.6 Power: 1.58W Contact: Øystein Karlsen (NKOM)	
		11:56-12:06 - 1.19.12 3 jammers at 150 meters from center H6.4, H6.5 and H6.6 Power: 1.58W Contact: Øystein Karlsen (NKOM)	
12:00	12:25-12:59 - 3.3.1 Meacon F1.1 "Porcellus": RX1 with ramping power Power: 10W Contact: Nicolai Gerrard (NKOM)	12:12-12:22 - 1.19.13 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 0.1W Contact: Øystein Karlsen (NKOM)	12:00-13:00 - 1.11.6 (Deprecated - Not available) Driving with multi-band jammer in test vehicle Power: 1W Contact: Jahn Erik Røhme (NPRA)
		12:28-12:38 - 1.19.14 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 0.1W Contact: Øystein Karlsen (NKOM)	
		12:44-12:54 - 1.19.15 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 0.1W Contact: Øystein Karlsen (NKOM)	

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Table 2.1: Tuesday (Continued)

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(3)
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: Christian Skjetne (NPRA)	13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Christian Skjetne (NPRA)
14:00	14:00-14:14 - 3.2.7 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating with different switching frequencies. Power: 10W Contact: Nicolai Gerrard (NKOM) <hr/> 14:25-14:45 - 3.2.5 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating with breaks Power: 10W Contact: Nicolai Gerrard (NKOM) <hr/> 14:55-15:11 - 3.2.6 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating with decreasing durations without breaks Power: 10W Contact: Nicolai Gerrard (NKOM)		14:00-14:30 - 1.10.3 Vehicle starting in dual-band denied environment Power: 0.1W Contact: Jahn Erik Røhme (NPRA) <hr/> 14:30-15:00 - 1.10.4 Vehicle starting in multi-band denied environment Power: 1.58W Contact: Jahn Erik Røhme (NPRA)

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Table 2.1: Tuesday (Continued)

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(3)
15:00	15:25-15:39 - 3.2.7 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating with different switching frequencies. Power: 10W Contact: Nicolai Gerrard (NKOM)	15:00-15:12 - 1.20.1 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM) <hr/> 15:18-15:30 - 1.20.2 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM) <hr/> 15:36-15:48 - 1.20.3 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM) <hr/> 15:54-16:06 - 1.20.4 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM)	15:00-15:30 - 1.10.3 Vehicle starting in dual-band denied environment Power: 0.1W Contact: Jahn Erik Røhme (NPRA) <hr/> 15:30-16:00 - 1.10.4 Vehicle starting in multi-band denied environment Power: 1.58W Contact: Jahn Erik Røhme (NPRA)

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Table 2.1: Tuesday (Continued)

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(3)
16:00	<div>16:00-16:01 - 1.18.4 Jammer F8.1 "Porcus Major": 50 W drift: 1545 to 1620 MHz, with CW and sweep time of 1 minute Power: 50W Contact: Nicolai Gerrard (NKOM)</div> <div>16:10-16:25 - 1.18.5 Jammer F8.1 "Porcus Major": 50 W drift: 1545 to 1620 MHz, with CW and sweep time of 15 minutes Power: 50W Contact: Nicolai Gerrard (NKOM)</div> <div>16:35-16:50 - 1.18.7 Jammer F8.1 "Porcus Major": 50 W drift: 1620 to 1545 MHz, with CW and sweep time of 15 minutes Power: 50W Contact: Nicolai Gerrard (NKOM)</div>	<div>16:12-16:24 - 1.20.5 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM)</div> <div>16:30-16:42 - 1.20.6 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM)</div> <div>16:48-17:00 - 1.20.7 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM)</div>	<div>16:00-16:30 - 1.10.3 Vehicle starting in dual-band denied environment Power: 0.1W Contact: Jahn Erik Røhme (NPRA)</div> <div>16:30-17:00 - 1.10.4 Vehicle starting in multi-band denied environment Power: 1.58W Contact: Jahn Erik Røhme (NPRA)</div>

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Table 2.1: Tuesday (Continued)

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(3)
17:00	<div><div>17:00-17:01 - 1.18.8 Jammer F8.1 "Porcus Major": 50 W drift: 1545 to 1620 MHz, gaussian noise with BW of 500 kHz and sweep time of 1 minute Power: 50W Contact: Nicolai Gerrard (NKOM)</div><div>17:10-17:25 - 1.18.13 Jammer F8.1 "Porcus Major": 50 W drift: 1150 to 1300 MHz, with CW and sweep time of 15 minutes Power: 50W Contact: Nicolai Gerrard (NKOM)</div><div>17:35-17:50 - 1.18.15 Jammer F8.1 "Porcus Major": 50 W drift: 1300 to 1150 MHz, with CW and sweep time of 15 minutes Power: 50W Contact: Nicolai Gerrard (NKOM)</div><div>17:59-18:00 - 1.18.16 Jammer F8.1 "Porcus Major": 50 W drift: 1150 to 1300 MHz, gaussian noise with BW of 500 kHz and sweep time of 1 minute Power: 50W Contact: Nicolai Gerrard (NKOM)</div></div>	<div><div>17:06-17:18 - 1.20.8 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM)</div><div>17:24-17:36 - 1.20.9 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM)</div><div>17:42-17:54 - 1.20.10 3 jammers at 50 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM)</div></div>	

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Table 2.1: Tuesday (Continued)

Tuesday 2024-09-10	Bleik(1)	Grunnvatn(2)	Motorcade(3)
18:00	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Contact: Christian Skjetne (NPRA)	18:00-18:12 - 1.20.11 3 jammers at 100 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM) <hr/> 18:18-18:30 - 1.20.12 3 jammers at 150 meters from center H1.1, H1.4 and H1.5 Power: 1W Comment: +30dBm from each direction (ca: +10dB antenna gain and +20dBm output) Contact: Øystein Karlsen (NKOM) <hr/> 18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)
19:00	19:15-22:00 - 1.16.4 High Power PRN jamming: L1, G1, L2, L5 Power: 100W Contact: Nicolai Gerrard (NKOM)		
20:00			
21:00			
22:00			

Wednesday

Location 1 Bleik

Wednesday will be used for position and SBAS spoofing.

Location 2 Grunnvatn

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

Location 3 Motorcade

Booking of timeslots available for custom testing.

Table 3.1: Wednesday

Wednesday 2024-09-11	Bleik(1)	Grunnvatn(2)	Motorcade(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 Bleik (Site 1) Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)
09:00	09:00-09:40 - 2.1.1 Large position and time jump, with power ramp Power: 0.316W Contact: Nicolai Gerrard (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. Spoofing route will 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. Spoofing signals: GPS L1 C/A. Galileo E1. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM)	

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Table 3.1: Wednesday (Continued)

Wednesday 2024-09-11	Bleik(1)	Grunnvatn(2)	Motorcade(3)
10:00	<div><div>10:00-10:15 - 2.1.3 Large position and time jump. Galileo E1 only Power: 0.316W Contact: Nicolai Gerrard (NKOM)</div><div>10:20-10:35 - 2.1.2 Large position and time jump. GPS L1 C/A only Power: 0.316W Contact: Nicolai Gerrard (NKOM)</div><div>10:40-10:55 - 2.1.4 Large position and time jump. GPS L1 and Galileo E1 only Power: 0.316W Contact: Nicolai Gerrard (NKOM)</div></div>		<div>10:00-11:00 - 0.2.1 Jamming booking slot Comment: Pre-booking required. Inform staff of required jammer equipment (see Appendix G of test catalog) Contact: Jahn Erik Røhme (NPRA)</div>
11:00	<div><div>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: Nicolai Gerrard (NKOM)</div><div>11:45-12:00 - 2.1.10 Simulated driving (route 1), with initial jamming Power: 0.316W Contact: Nicolai Gerrard (NKOM)</div></div>	<div>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. Spoofing route will 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. Spoofing signals: GPS L1 C/A. Galileo E1. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM)</div>	<div>11:00-12:00 - 0.2.1 Jamming booking slot Comment: Pre-booking required. Inform staff of required jammer equipment (see Appendix G of test catalog) Contact: Jahn Erik Røhme (NPRA)</div>

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Table 3.1: Wednesday (Continued)

Wednesday 2024-09-11	Bleik(1)	Grunnvatn(2)	Motorcade(3)
12:00	<div><div>12:30-12:40 - 2.8.1 EGNOS with "Do Not Use GPS" commands Power: 1W Contact: Nicolai Gerrard (NKOM)</div><div>12:45-13:00 - 2.8.1 EGNOS with "Do Not Use GPS" commands Power: 1W Contact: Nicolai Gerrard (NKOM)</div></div>	<div>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. Spoofing route will 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. Spoofing signals: GPS L1 C/A. Galileo E1. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM)</div>	<div>12:00-13:00 - 0.2.1 Jamming booking slot Comment: Pre-booking required. Inform staff of required jammer equipment (see Appendix G of test catalog) Contact: Jahn Erik Røhme (NPRA)</div>
13:00	<div>13:00-14:00 - 0.1.1 Grace period Comment: Lunch Contact: Christian Skjetne (NPRA)</div>	<div>13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Christian Skjetne (NPRA)</div> <div>13:10-13:50 - 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)</div>	<div>13:00-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Christian Skjetne (NPRA)</div>

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Table 3.1: Wednesday (Continued)

Wednesday 2024-09-11	Bleik(1)	Grunnvatn(2)	Motorcade(3)
14:00	14:00-14:15 - 2.2.3 Position jump Power: 0.316W Contact: Nicolai Gerrard (NKOM)	14:00-14:55 - 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. Spoofing route will 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. Spoofing signals: GPS L1 C/A. Galileo E1. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM)	14:00-15:00 - 0.2.1 Jamming booking slot Comment: Pre-booking required. Inform staff of required jammer equipment (see Appendix G of test catalog) Contact: Jahn Erik Røhme (NPRA)
	14:20-14:35 - 2.3.3 Small position jump Power: 0.316W Contact: Nicolai Gerrard (NKOM)		
	14:40-14:55 - 2.3.2 Small position jump with initial and continuous jamming Power: 0.316W Contact: Nicolai Gerrard (NKOM)		
15:00	15:25-15:35 - 2.3.8 Simulated driving (route 1). Galileo only Power: 0.316W Contact: Nicolai Gerrard (NKOM)	15:05-16:00 - 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. Spoofing route will 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. Spoofing signals: GPS L1 C/A. Galileo E1. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM)	15:00-16:00 - 0.2.1 Jamming booking slot Comment: Pre-booking required. Inform staff of required jammer equipment (see Appendix G of test catalog) Contact: Jahn Erik Røhme (NPRA)
	15:40-15:50 - 2.3.5 Simulated driving (route 1). GPS only Power: 0.316W Contact: Nicolai Gerrard (NKOM)		
	15:55-16:05 - 2.3.10 Simulated driving (route 1) Power: 0.316W Contact: Nicolai Gerrard (NKOM)		

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Table 3.1: Wednesday (Continued)

Wednesday 2024-09-11	Bleik(1)	Grunnvatn(2)	Motorcade(3)
16:00	<p>16:10-16:25 - 2.3.11 Simulated driving (route 1) with initial and continuous jamming. Power: 0.316W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>16:55-17:05 - 2.3.15 Flying (route 2) - "helicopter scenario" Power: 0.316W Contact: Nicolai Gerrard (NKOM)</p>	<p>16:10-17:05 - 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. Spoofing route will 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. Spoofing signals: GPS L1 C/A. Galileo E1. Spoofing route duration is 40 minutes. Contact: Øystein Karlsen (NKOM)</p>	<p>16:00-17:00 - 0.2.1 Jamming booking slot Comment: Pre-booking required. Inform staff of required jammer equipment (see Appendix G of test catalog) Contact: Jahn Erik Røhme (NPRA)</p>
17:00	<p>17:10-17:20 - 2.3.12 Flying (route 4) - "drone scenario" GPS L1 C/A only Power: 0.316W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>17:30-17:40 - 2.3.13 Flying (route 4) - "drone scenario" Power: 0.316W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>17:45-18:00 - 2.3.15 Flying (route 2) - "helicopter scenario" Power: 0.316W Contact: Nicolai Gerrard (NKOM)</p>		
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 Bleik (Site 1) Contact: Christian Skjetne (NPRA)</p>	<p>18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)</p>

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Table 3.1: Wednesday (Continued)

Wednesday 2024-09-11	Bleik(1)	Grunnvatn(2)	Motorcade(3)
19:00			
20:00			
21:00			
22:00			

Thursday

Location 1 Bleik

Thursday will be used for time spoofing. During the evening there will be long time meaoning running untill 22:00.

Location 2 Grunnvatn

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

Location 3 Motorcade

Mobile SDR spoofing. Timeslot after lunch is still not decided.

Table 4.1: Thursday

Thursday 2024-09-12	Bleik(1)	Grunnvatn(2)	Motorcade(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 Bleik (Site 1) Contact: Christian Skjetne (NPRA)	08:00-08:30 - 0.0.1 Mandatory morning briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)
09:00	09:00-09:25 - 2.4.2 Time offset 15 minutes from real time, with power ramp Power: 0.0316W Contact: Nicolai Gerrard (NKOM) <hr/> 09:40-09:55 - 2.4.3 Time offset -3 minutes from real time, with power jump Power: 0.0316W Contact: Nicolai Gerrard (NKOM)	test 0.0.0 not found in catalog	
10:00	10:10-10:25 - 2.4.12 Static + Pseudorange error Power: 0.0316W Contact: Nicolai Gerrard (NKOM) <hr/> 10:40-10:55 - 2.4.13 Static + Pseudorange error, with initial and continous jamming Power: 0.001W Contact: Nicolai Gerrard (NKOM)		10:00-10:20 - 2.6.1 Spoofers (in vehicle with roof mounted antenna) stationary with dynamic spoofed position. Power: 0.01W Contact: Anders Rødningby (FFI) <hr/> 10:45-11:05 - 2.6.2 Spoofers (in vehicle with roof mounted antenna) stationary and then moving with fixed spoofed position. Power: 0.01W Contact: Anders Rødningby (FFI)

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Table 4.1: Thursday (Continued)

Thursday 2024-09-12	Bleik(1)	Grunnvatn(2)	Motorcade(3)
11:00	<p>11:25-11:40 - 2.5.6 Time offset 15 minutes from real time Power: 0.001W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>11:55-12:10 - 2.5.3 Time offset -3 minutes from real time, with power jump Power: 0.001W Contact: Nicolai Gerrard (NKOM)</p>		<p>11:30-11:50 - 2.6.3 Spoofers (in vehicle with roof mounted antenna) moving with fixed spoofed position. Power: 0.01W Contact: Anders Rødningsby (FFI)</p>
12:00	<p>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: Nicolai Gerrard (NKOM)</p>		<p>12:15-12:35 - 2.6.4 Spoofers (in vehicle with roof mounted antenna) stationary and then moving with first fixed and then dynamic spoofed position. Power: 0.01W Contact: Anders Rødningsby (FFI)</p>
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: Christian Skjetne (NPRA)</p>	<p>13:05-14:00 - 0.1.1 Grace period Comment: Lunch @ Stave (Site 3) Contact: Christian Skjetne (NPRA)</p>
14:00	<p>14:00-14:15 - 2.5.5 Time offset 15 minutes from real time. Galileo E1 Power: 0.0316W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>14:20-14:35 - 2.5.4 Time offset 15 minutes from real time. GPS L1 C/A Power: 0.0316W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>14:40-14:55 - 2.5.6 Time offset 15 minutes from real time Power: 1e-05W Contact: Nicolai Gerrard (NKOM)</p>		<p>14:00-14:20 - 2.6.1 Spoofers (in vehicle with roof mounted antenna) stationary with dynamic spoofed position. Power: 0.01W Contact: Anders Rødningsby (FFI)</p> <hr/> <p>14:45-15:05 - 2.6.2 Spoofers (in vehicle with roof mounted antenna) stationary and then moving with fixed spoofed position. Power: 0.01W Contact: Anders Rødningsby (FFI)</p>

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Table 4.1: Thursday (Continued)

Thursday 2024-09-12	Bleik(1)	Grunnvatn(2)	Motorcade(3)
15:00	15:25-15:40 - 2.5.13 Static + Pseudorange error. GPS L1 and Galileo E1 only Power: 0.001W Contact: Nicolai Gerrard (NKOM)		15:30-15:50 - 2.6.3 Spoofers (in vehicle with roof mounted antenna) moving with fixed spoofed position. Power: 0.01W Contact: Anders Rødningsby (FFI)
16:00	15:45-16:00 - 2.5.15 Static + Pseudorange error Power: 1e-05W Contact: Nicolai Gerrard (NKOM)		
16:00	16:15-16:40 - 2.5.16 Static + Pseudorange error, with initial and continuous jamming Power: 1e-05W Contact: Nicolai Gerrard (NKOM)		16:15-16:35 - 2.6.4 Spoofers (in vehicle with roof mounted antenna) stationary and then moving with first fixed and then dynamic spoofed position. Power: 0.01W Contact: Anders Rødningsby (FFI)
16:00	16:55-17:20 - 2.5.26 Static + UTC-parameter nav. data manipulation (removing leap seconds). GPS L1 C/A Power: 1e-05W Contact: Nicolai Gerrard (NKOM)		
17:00	17:30-18:00 - 2.5.27 Static + UTC-parameter nav. data manipulation (removing leap seconds) Power: 1e-05W Contact: Nicolai Gerrard (NKOM)		
18:00	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY Contact: Christian Skjetne (NPRA)	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)	18:30-19:00 - 0.0.2 Mandatory afternoon (de)briefing Comment: MANDATORY attendance at Bleik (Site 1) Contact: Christian Skjetne (NPRA)
19:00	19:30-22:00 - 3.1.3 Meacon F1.1 "Porcellus": RX1 at 10 W Power: 10W Contact: Nicolai Gerrard (NKOM)		

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Table 4.1: Thursday (Continued)

Thursday			
2024-09-12	Bleik(1)	Grunnvatn(2)	Motorcade(3)
20:00			
21:00			
22:00			

Friday

Location 1 Bleik

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.

Location 2 Grunnvatn

Site is closed! No testing.

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Location 3 Motorcade

There will be no testing on this site on Friday.

Table 5.1: Friday

Friday 2024-09-13	Bleik(1)	Grunnvatn(2)	Motorcade(3)
Start time:	08:00	09:00	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 Bleik (Site 1) Contact: Christian Skjetne (NPRA)
09:00	09:00-09:10 - 0.3.1 Ad hoc test Power: 0.316W Comment: L2 only spoofing Contact: Nicolai Gerrard (NKOM) <hr/> 09:20-09:40 - 0.3.1 Ad hoc test Power: 10W Comment: 3.1.3 + 2.1.2, meaoning (10 W) + spoofing (20 dBm) Contact: Nicolai Gerrard (NKOM) <hr/> 09:50-10:00 - 3.2.5 Meacon F1.1 "Porcellus": RX1 and RX2 at 10 W alternating with breaks Power: 10W Comment: Only using RX1 Contact: Nicolai Gerrard (NKOM)	09:00-16:00 - 0.1.1 Grace period Comment: SITE IS CLOSED! Contact: Øystein Karlsen (NKOM)	

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Table 5.1: Friday (Continued)

Friday 2024-09-13	Bleik(1)	Grunnvatn(2)	Motorcade(3)
10:00	<p>10:10-10:33 - 1.6.4 Power ramping with Jammer F8.1 "Porcus Major": 0.2 μW (-37dBm) to 50 W (47dBm) with 2 dB increments PRN: L1, G1, L2, L5</p> <p>Power: 50W Comment: 20 seconds per step, power ramp (up and down) from -21 (to 47) dBm Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>10:50-11:10 - 2.7.12 Static + Time manipulation (2 years forwards), with power ramp</p> <p>Power: 0.0316W Contact: Nicolai Gerrard (NKOM)</p>		
11:00	<p>11:30-11:50 - 2.7.16 Static + Time manipulation (April 2019), with initial and continuous jamming</p> <p>Power: 0.0316W Contact: Nicolai Gerrard (NKOM)</p>		
12:00	<p>12:00-12:22 - 2.4.2 Time offset 15 minutes from real time, with power ramp</p> <p>Power: 0.0316W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>12:30-12:40 - 2.5.5 Time offset 15 minutes from real time. Galileo E1</p> <p>Power: 0.0316W Contact: Nicolai Gerrard (NKOM)</p> <hr/> <p>12:50-13:00 - 0.3.1 Ad hoc test</p> <p>Power: 0.316W Comment: Jamming of L1, G1, BII from S (the spoofing system) Contact: Nicolai Gerrard (NKOM)</p>		

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Table 5.1: Friday (Continued)

Friday 2024-09-13	Bleik(1)	Grunnvatn(2)	Motorcade(3)
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 @ Bleik (Site1) Contact: Christian Skjetne (NPRA)
14:00	14:00-14:30 - 0.0.2 Mandatory afternoon (de)briefing Comment: Summary briefing and closing of event Contact: Christian Skjetne (NPRA)		
15:00			
16:00			
17:00			
18:00			
19:00			
20:00			
21:00			
22:00			