



Flight Plan for: 28 March 2022

POLAR 6

Take Off: 09:00 UTC
Duration: 04:46 Hours

Pilots: ??
??

Crew:

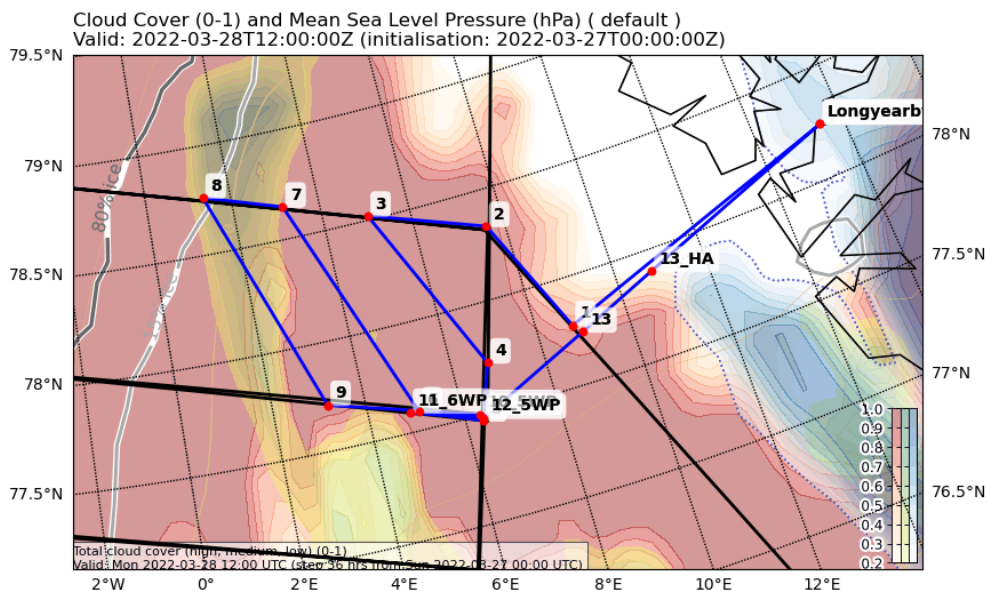
Mission PI	Christiane Voigt
AWI	??
AWI	??
Trace gases	??
Aerosol	??
PMS	Johannes Lucke

Waypoints:

HALO_AC3_20220328_P6

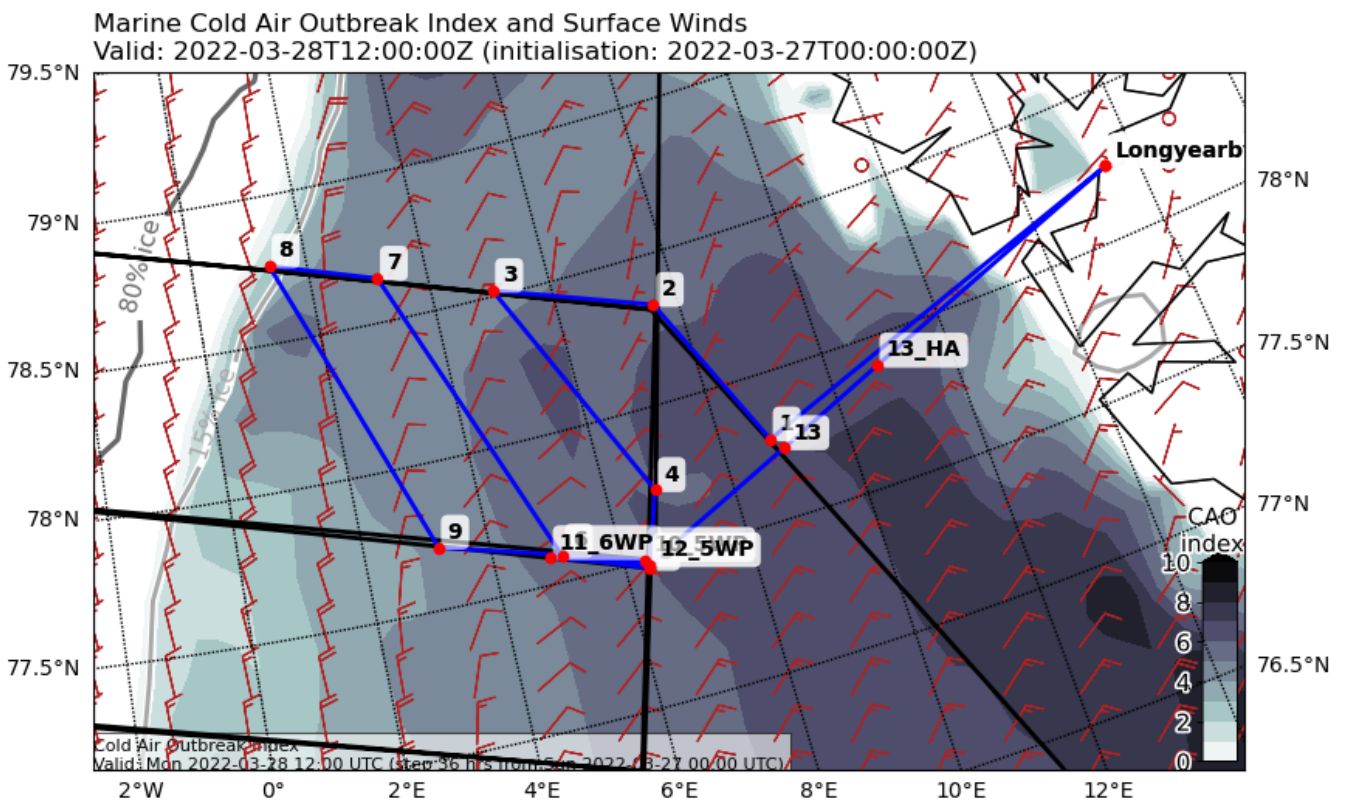
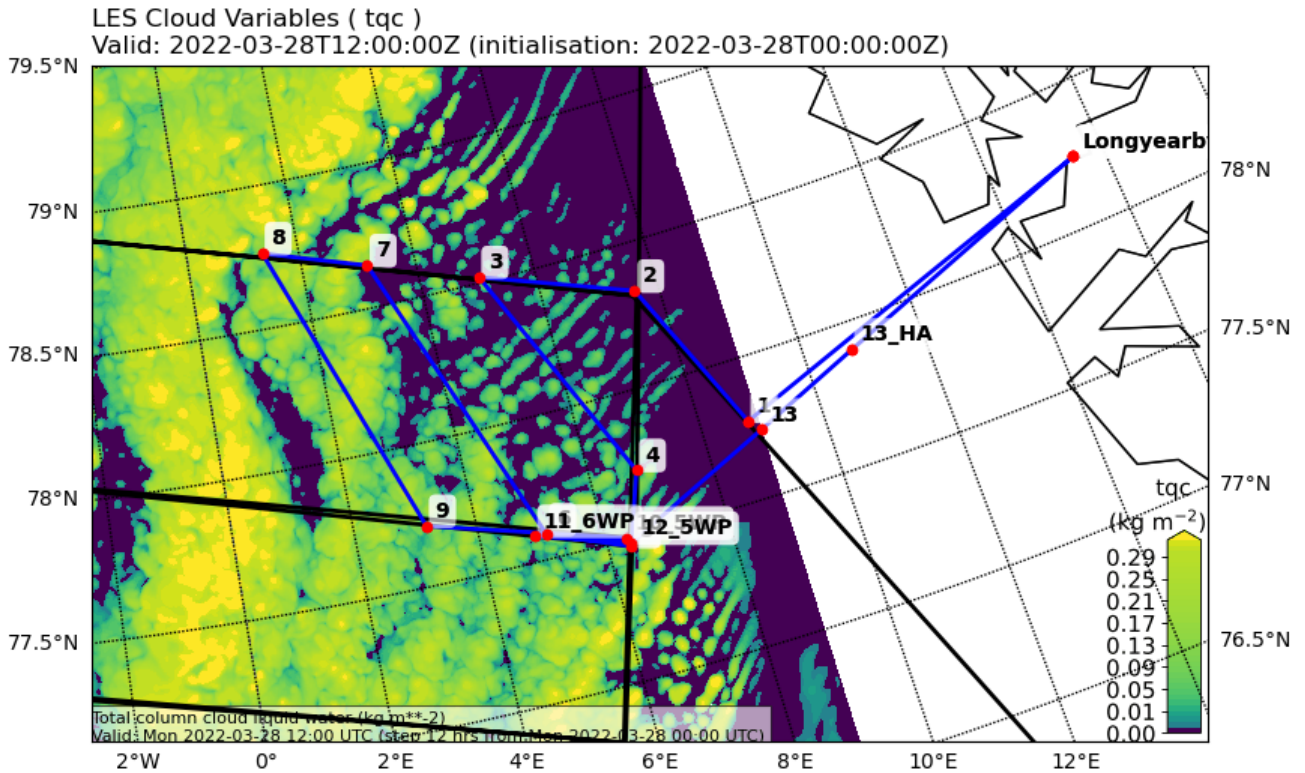
Index	Lat (D°M.m)	Lon (D°M.m)	Loc	Lat (+90)	Lon (+-180)	FL	Pres (hPa)	Leg (nm)	Cum. Di. (nm)	UTC Time	Leg time	Cum. time
W0	78°14.7' N	015°28.9' E	LY	78.245	15.482	46	855.8	0	0	09:00:00	00:00:00	00:00:00
W1	77°46.7' N	008°46.9' E	1	77.778	8.782	22	935.2	88.5	88.5	09:44:14	00:44:14	00:44:14
W2	78°19.8' N	007°35.3' E		78.331	7.588	36	888.2	36.5	125	10:02:29	00:18:15	01:02:29
W3	78°31.2' N	005°01.7' E		78.52	5.028	58	818.1	33	158	10:18:59	00:16:30	01:18:59
W4	77°43.5' N	006°46.8' E		77.724	6.78	40	875.1	52.6	210.6	10:45:18	00:26:19	01:45:18
W5	77°28.3' N	006°22.1' E		77.471	6.369	31	904.8	16.2	226.8	10:53:23	00:08:05	01:53:23
W6	77°35.2' N	005°05.1' E		77.587	5.085	20	942.1	18.1	244.9	11:02:26	00:09:03	02:02:26
W7	78°38.9' N	003°09.1' E		78.649	3.151	50	843.1	68.4	313.3	11:36:38	00:34:12	02:36:38
W8	78°45.8' N	001°21.3' E		78.763	1.355	60	812	22.3	335.6	11:47:47	00:11:09	02:47:47
W9	77°42.7' N	003°11.6' E		77.711	3.194	40	875.1	67.3	402.8	12:21:25	00:33:38	03:21:25
W10	77°30.3' N	006°19.5' E	10_5	77.505	6.325	20	942.1	42.4	445.2	12:42:37	00:21:12	03:42:37
W11	77°35.4' N	004°53.4' E	11_6	77.591	4.89	20	942.1	19.4	464.6	12:52:18	00:09:41	03:52:18
W12	77°29.0' N	006°23.0' E	12_5	77.483	6.383	20	942.1	20.5	485.1	13:02:33	00:10:15	04:02:33
W13	77°44.1' N	008°56.8' E		77.736	8.947	120	644.4	36.5	521.6	13:15:26	00:12:53	04:15:26
W14	77°54.1' N	010°47.5' E	13H	77.901	10.792	120	644.4	25.5	547.1	13:24:26	00:09:00	04:24:26
W15	78°14.7' N	015°28.9' E	LY	78.245	15.482	0	1013.2	62	609.1	13:46:19	00:21:53	04:46:19

Overview Map:



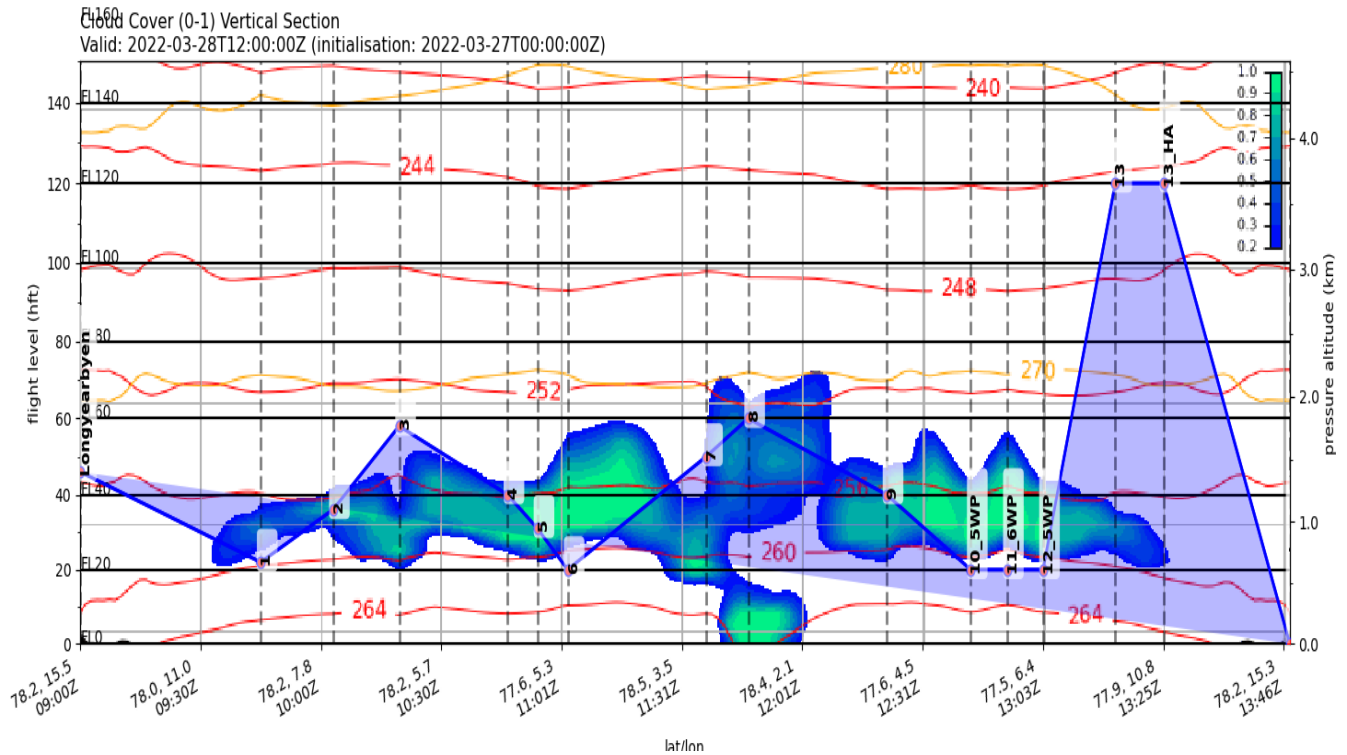


Detailed Map:





Detailed Map:

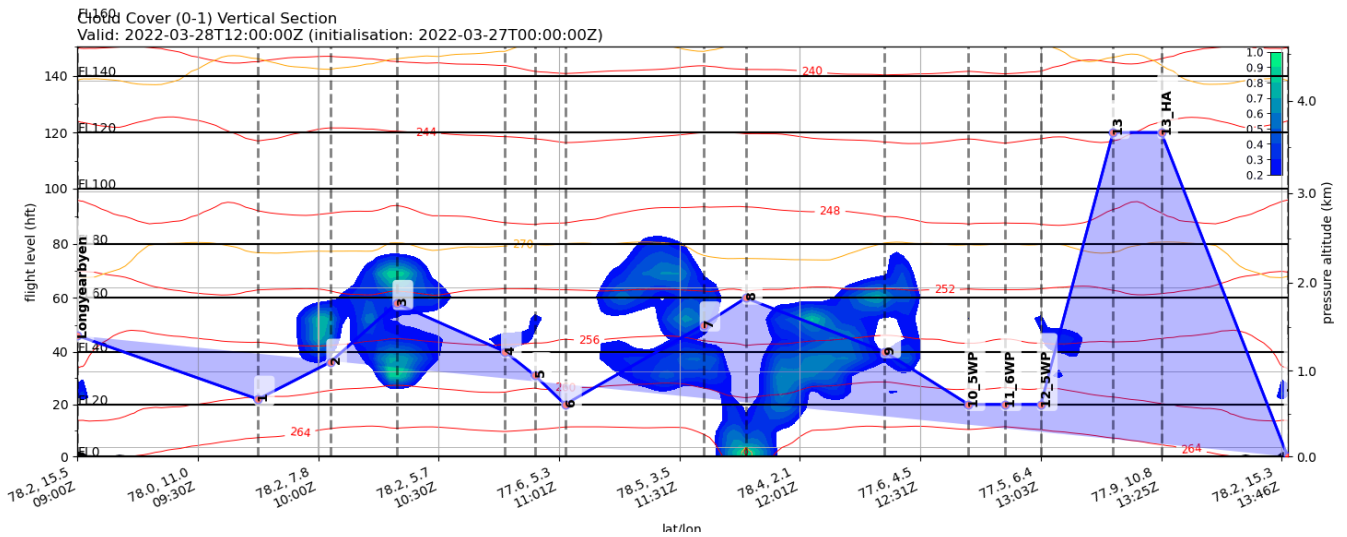
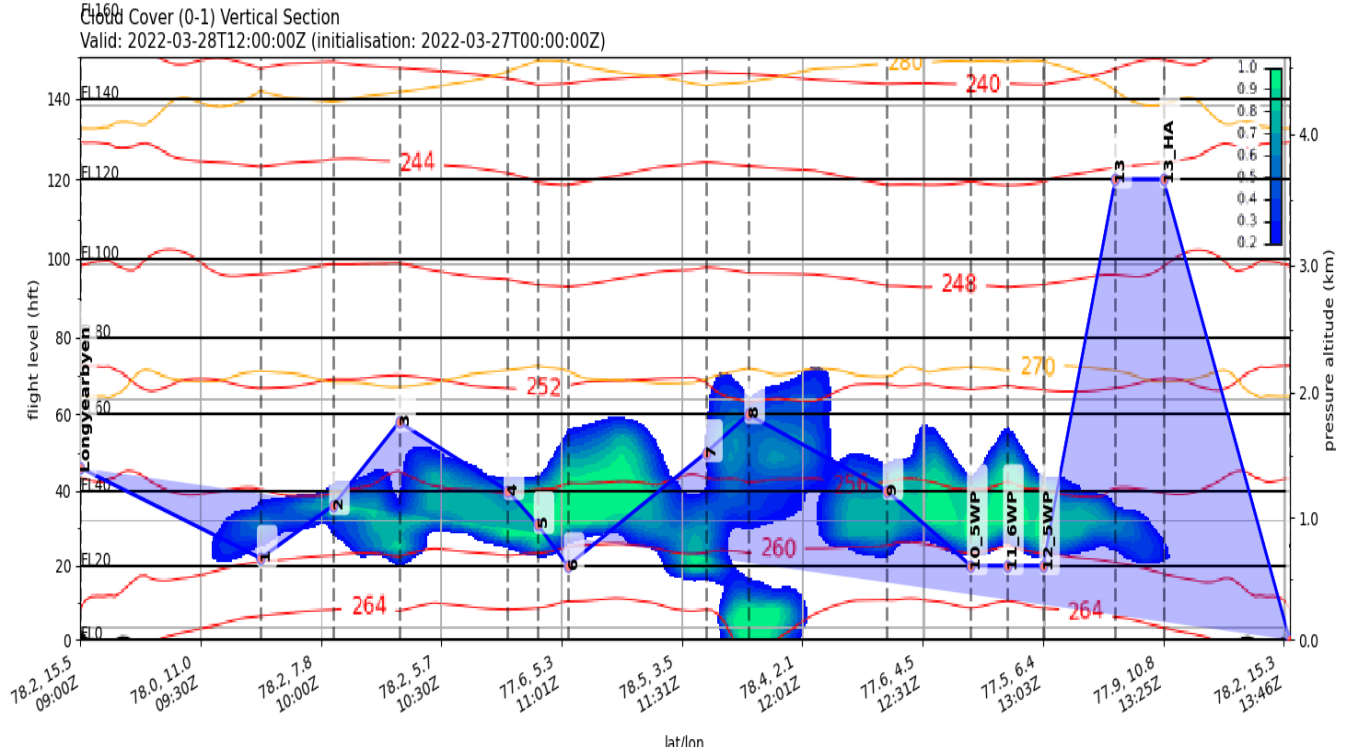


Flight Plan:

- LYR – W1** ascend to FL 50: 1000ft/min, 5 min FL50 then descend to FL20 **44 min**
- W1 ↔ W7** staged patterns, 7 min each (120kn, 500ft/min)
- 1 leg below cloud, 2-3 legs in cloud (e.g. FL 30, 40, 50) one leg above cloud (e.g. FL60), slow descent through clouds, then restart, all turns short turns **1h32 min**
- W7 ↔ W8** convergence zone FL50 in clouds **11 min**
- W8 ↔ W9** slow descent through clouds, staged patterns, 7 min legs (e.g. FL 40, 30, 20) in cloud and below cloud **33 min**
- W9 ↔ W10** saw tooth ascent /descent through cloud (500ft/min, 120km) **22 min**
- W10 ↔ W12** below cloud leg, aerosol, turbulence: FL20, 120kn **20 min**
- W12 ↔ W13HA** ascent through cloud to FL120, stay FL120, 140 kn for high latitude leg 500 ft/min in cloud, 1000 ft/min above cloud 140 kn **22min**
- W13HA ↔ LYR** slow descent **21 min**
- Total:** **4 hr 46 min**

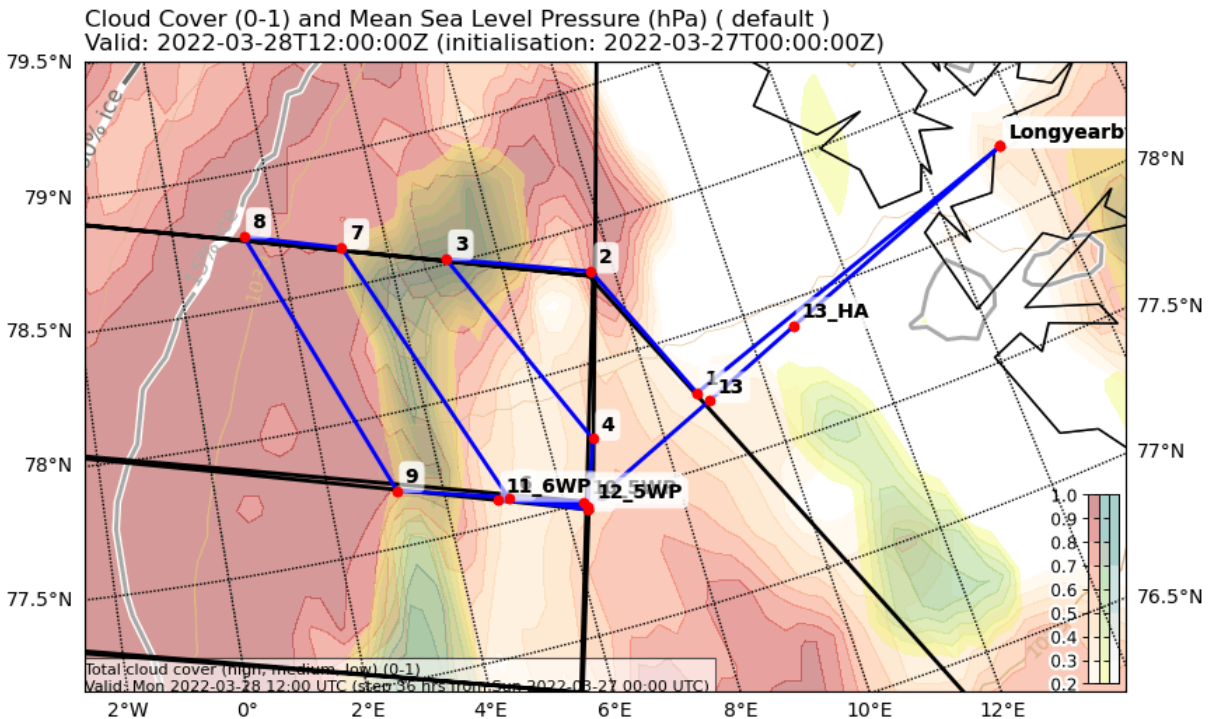
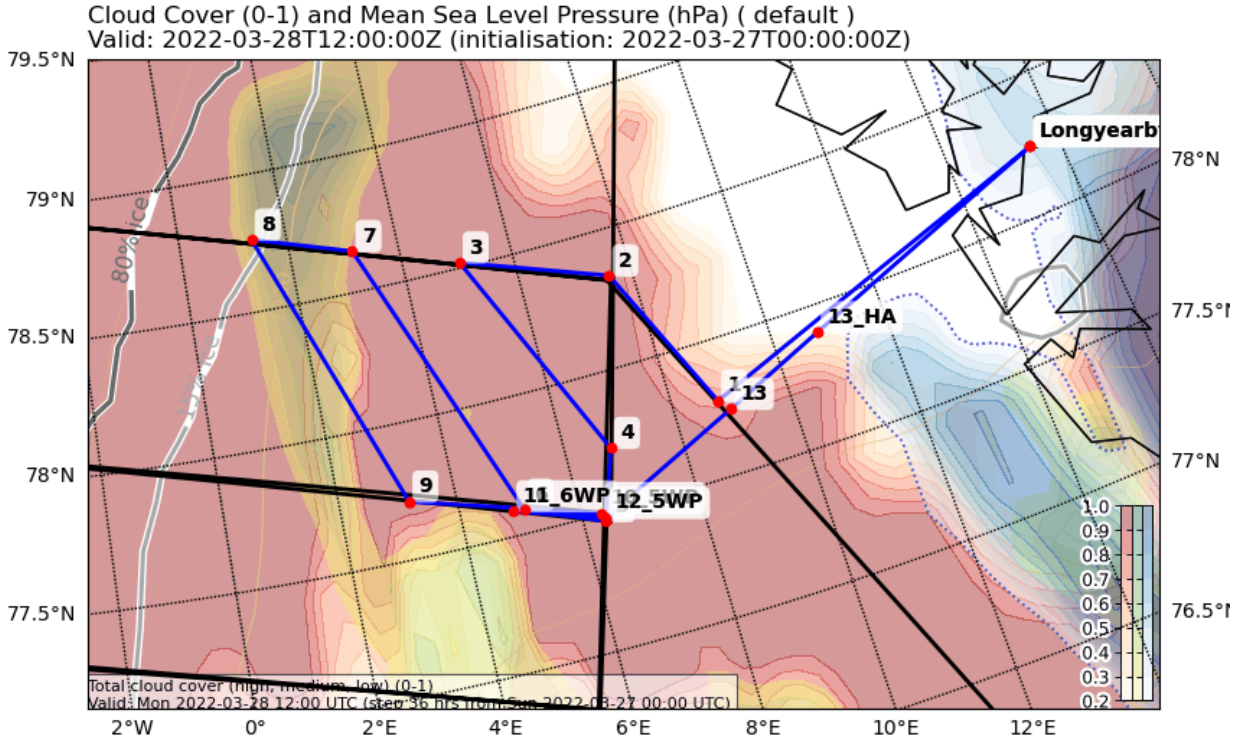


Detailed Map:



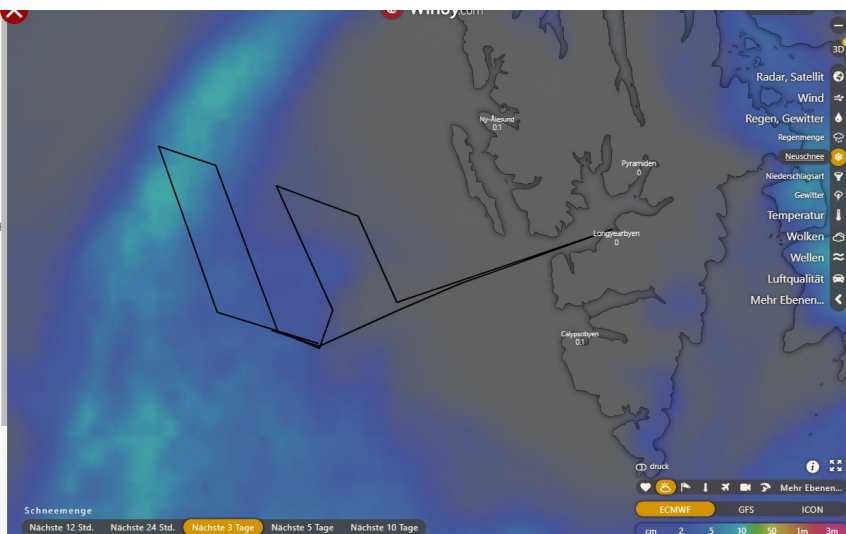
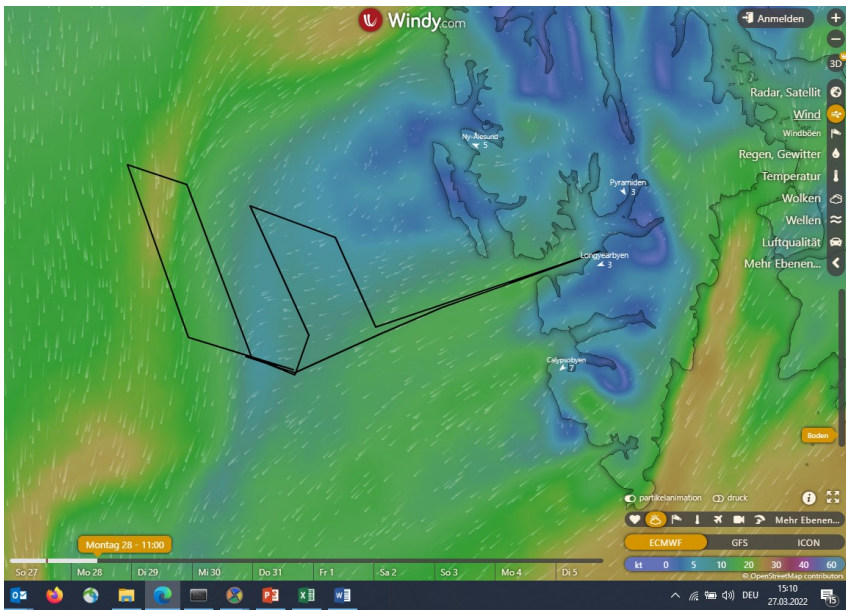
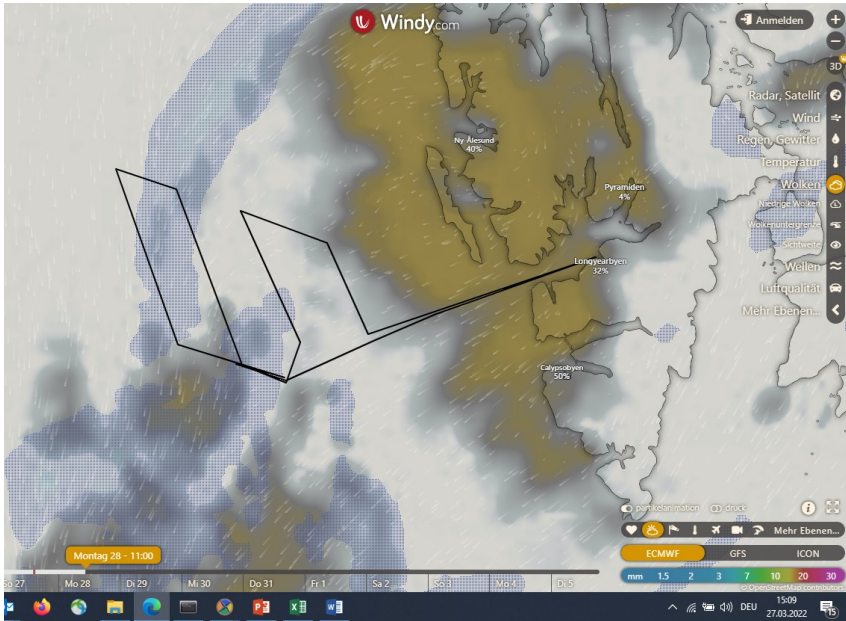


Detailed Map:





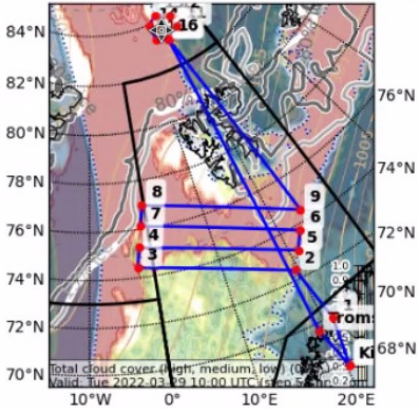
Detailed Map:



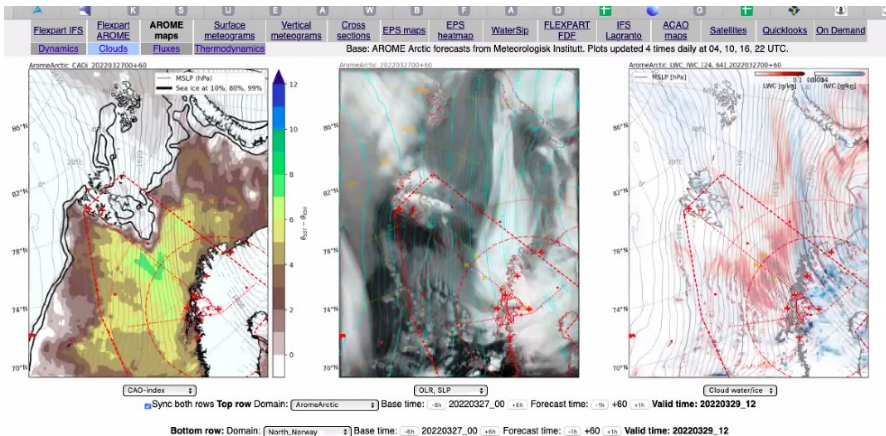
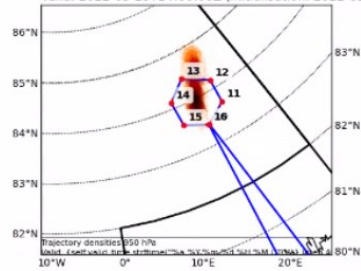
Preliminary Flightplans for Tuesday 29 March 2022

HALO and FAAM

Cloud Cover (0-1) and Mean Sea Level Pressure (hPa) (TOT)
Valid: 2022-03-29T10:00:00Z (initialisation: 2022-03-27T00:00:00Z)



Trajectory density (arb.u.) at 950.0 (hPa)
Valid: 2022-03-29T14:00:00Z (initialisation: 2022-03-29T10:00:00Z)





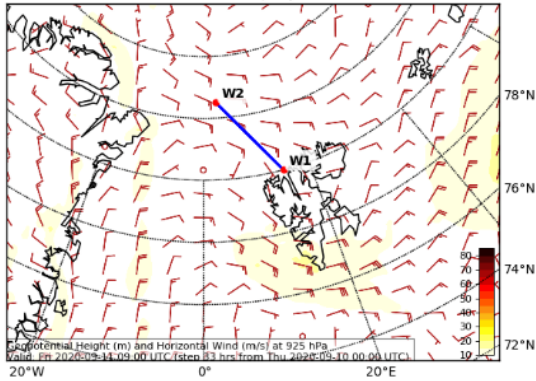
Objectives of the Flight:

- Characterize the CAO situation in the lee of Svalbard on atmosphere and cloud conditions,
- Dig into convection zone west of Svalbard
- Coordinate with P5 for collocated and radar/in-situ legs at the same time
- Coordinate with HALO for collocated HALO legs in south-easterly wind conditions by

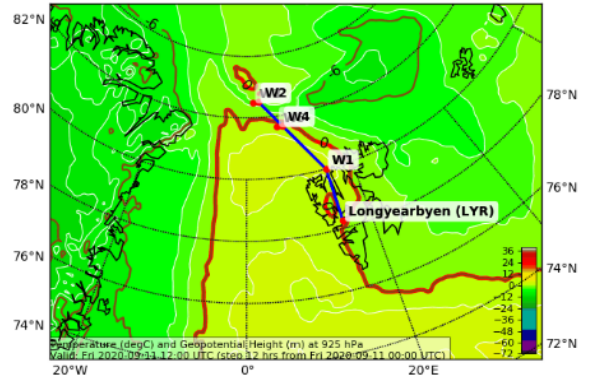
General Weather Situation:

Low pressure south of Svalbard caused a south-easterly flow around the island. A long front is still located west of Svalbard. This trough also generates a kind of front close to the west coast of Svalbard which is avoided in the flight plan. Similar to the day before, north of Svalbard a strong lee effect causes a cloud free area orientated in north-west direction. In this area also rather warm temperatures are predicted. North of the cloud-free lee hole, low clouds are forecasted by ECMWF and ICON. During the day, the cloud-free lee hole is predicted to narrow and close. This cloud free area we aim to cross on both ways.

Geopotential Height (m) and Horizontal Wind (m/s) (Wind Speed 10-85 m/s)
Valid: Fri 2020-09-11 09:00 UTC (step 33 hrs from Thu 2020-09-10 00:00 UTC)

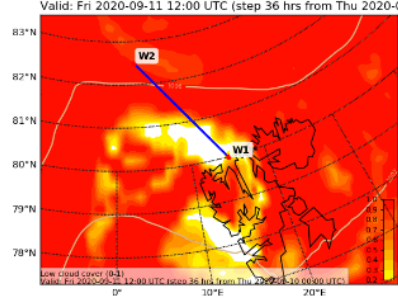


Temperature (degC) and Geopotential Height (m) at 925.0 (Pa)
Valid: Fri 2020-09-11 12:00 UTC (step 12 hrs from Fri 2020-09-11 00:00 UTC)

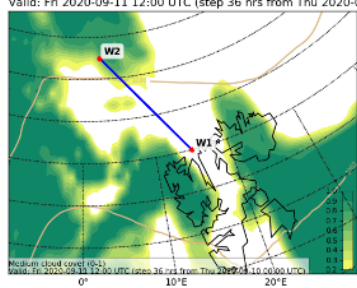


ECMWF Wind field and temperature in 925 hPa.

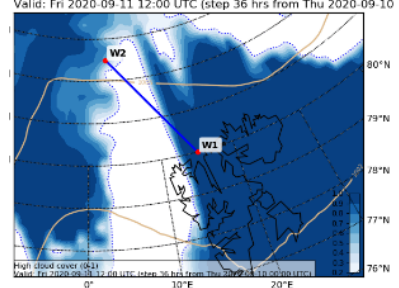
Cloud Cover (0-1) (Low Cloud Cover)
Valid: Fri 2020-09-11 12:00 UTC (step 36 hrs from Thu 2020-09-10 00:00 UTC)



Cloud Cover (0-1) (Medium Cloud Cover)
Valid: Fri 2020-09-11 12:00 UTC (step 36 hrs from Thu 2020-09-10 00:00 UTC)

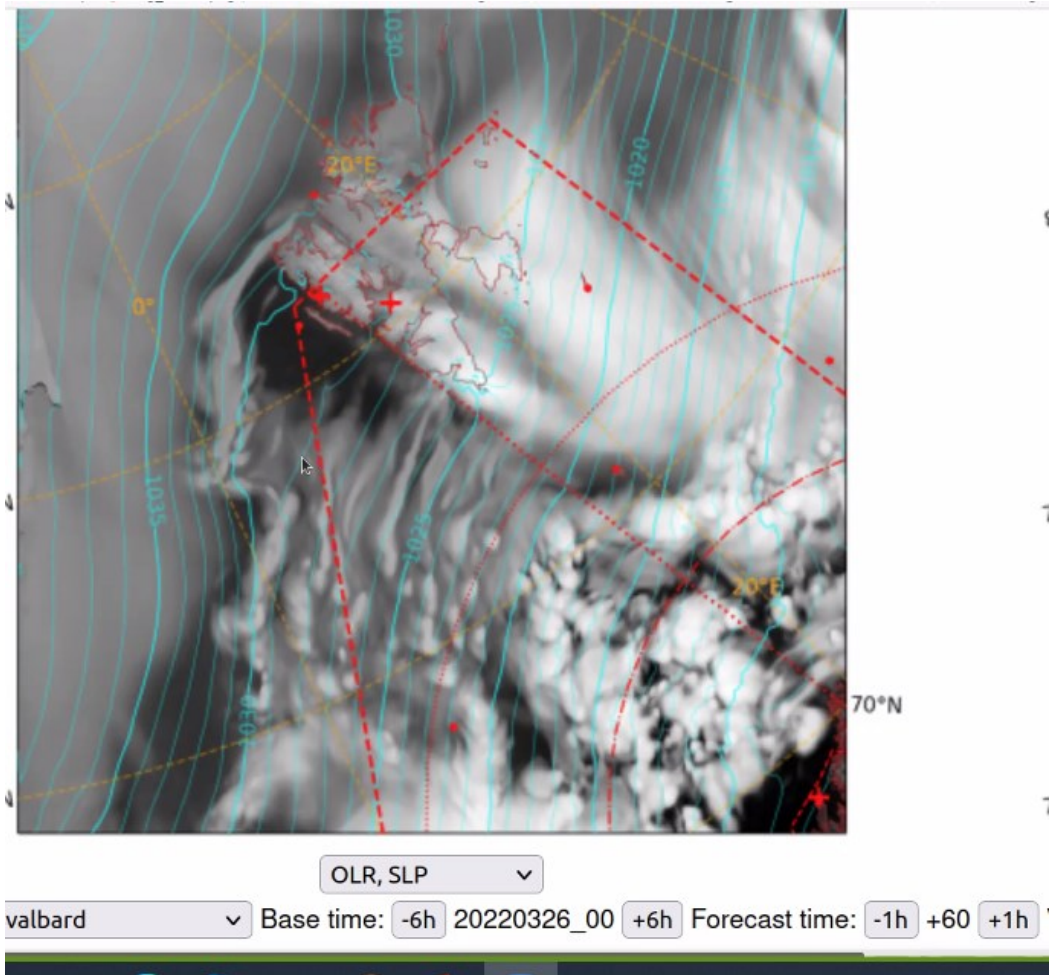


Cloud Cover (0-1) (High Cloud Cover)
Valid: Fri 2020-09-11 12:00 UTC (step 36 hrs from Thu 2020-09-10 00:00 UTC)



ECMWF Low, mid-level and high cloud cover.

Both models predict midlevel at the northern edge of the flight track, but in different altitudes. High clouds are forecasted at the eastern and western end of the track. This complex situation is challenging for the flight planning but may also be a chance to sample such a scenario.



ATR
12.30 UTC
11,78 N

Planet: halo_ground
halodlr