

IOP	Begin	End	Scenario	Daily Reports				Notes	Convective Development
IOP-1a	05/06/2007 0400 UTC	05/06/2007 2000 UTC	High Pressure Convection	SD	OP	FS	WS	# Surface stations partly available # ground based remote sensing partly available # no aircraft # vertical soundings partly # test sequence for radiosounding at H and R	Isolated diurnally-induced showers capped by an inversion at 600 hPa after 9:30
IOP-1b	06/06/2007 0400 UTC	06/06/2007 2000 UTC	High Pressure Convection	SD	OP	FS	WS	# Surface stations partly available # ground based remote sensing partly available # no aircraft # vertical soundings partly # no radiosondes at H	Isolated diurnally-induced showers after 13:30. Dissappearing inversion. After 16:00, clustered showers moving westward off the SwabianJura.
IOP-1c	07/06/2007 0400 UTC	07/06/2007 2000 UTC	High Pressure Convection	SD	OP	FS	WS	# Surface stations partly available # ground based remote sensing partly available # no aircraft # vertical soundings partly # no radiosondes at H	A few deep surface-based convective showers develop across the southern Black Forest after 14:00.
IOP-1d	08/06/2007 0400 UTC	08/06/2007 2000 UTC	High pressure/forced convection	SD	OP	FS	WS	# Surface stations partly available # ground based remote sensing partly available # no aircraft # vertical soundings partly # no radiosondes at H	Scattered surface-based diurnally-induced showers over the Vosges and central and southern Black Forest.
IOP-2	12/06/2007 0600 UTC	12/06/2007 1800 UTC	Weakly forced diurnal convection	SD	OP	FS	WS	# Surface stations partly available # ground based remote sensing partly available # no aircraft # vertical soundings partly	Isolated weak diurnally-induced showers across the hills/mountains of the southern half of the COPS area after 14:00.
IOP-3a	14/06/2007 0400 UTC	14/06/2007 2000 UTC	Weakly forced diurnal convection	SD	OP	FS	WS	# Surface stations partly available # ground based remote sensing partly available # no aircraft # vertical soundings at Burnhaupt, Achern, Hornisgrinde and FZK # 12 dropup sondes launches at 4 sites	After 9:00 relatively strong storms developing between the Black Forest and Swabian Jura. Between 12:00 and 14:00 weak storms in the Rhine Valley. From 15:30, a small squall-line moving northnortheastward through the Rhine Valley. It expands southeastward in the evening.
IOP-3b	15/06/2007 0400 UTC	15/06/2007 1100 UTC	Forced convection	SD	OP	FS	WS	# Surface stations partly available # ground based remote sensing partly available # planned flight was cancelled # vertical soundings at Burnhaupt, Achern, Hornisgrinde and FZK # drop sonde releases cancelled # IOP finished at 11 UTC	Widespread cloudiness and no convective showers.
IOP-4a	19/06/2007 0600 UTC	19/06/2007 2000 UTC	High pressure convection	SD	OP	FS	WS	# most of surface stations available # ground based remote sensing partly available # Research flights by DO 128 and Enduro # vertical soundings at Achern, Hornisgrinde, FZK and Burnhaupt # no drop sonde release # Doppler on wheels operating at DNE1/5 # IOP finished at 20 UTC	No convective showers. Medium-sized cumulus over the mountains.
IOP-4b	20/06/2007 0500 UTC	20/06/2007 2300 UTC	Forced convection	SD	OP	FS	WS	# most of surface stations available # ground based remote sensing partly available # Research flights by DO 128 and Enduro # vertical soundings at Achern, Hornisgrinde, FZK and Burnhaupt # release of 15 dropup sondes # Doppler on wheels operating at DNE1/5 # IOP finished at 23 UTC	From 13:30 a few diurnally-induced showers forming over the Vosges and northeastern Black Forest. After 17:00 intensification of Eastern Vosges/Rhine-Valley storms and initiation of strong storms east of Freudenstadt and east of Feldberg. More widespread initiation and clustering of storms between the Black Forest and Swabian Jura later in the evening.

<b>IOP-5a</b>	01/07/2007 0400 UTC	01/07/2007 2300 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing operational # 3 research flights by DO 128: PreCon HR, PreCon HR, SupDe+Dropping # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # release of 6 drop sondes by DO 128 # Doppler on wheels operating at site Neuried	Typical synoptically-forced set-up with southwesterly flow of moist, warm air. However, convective initiation failure during daytime. Abundant mid- and upper-level cloudiness. Some strong storms form to the NW of the COPS area in the evening, but only weak showers occur in the COPS area.
<b>IOP-5b</b>	02/07/2007 0500 UTC	02/07/2007 0500 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 2 research flights by DO 128: SupDe HR, SupDe HR + Dropping (3 sondes) # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # release of 11 dropup sondes on 3 stations (29, 41, 47) # Doppler on Wheels operating at site Neuried	Behind frontal cloudiness over the eastern part of the COPS area, storms develop within a polar air-mass after 9:00, that become more intense during the day and organize linearly.
<b>IOP-6</b>	04/07/2007 0500 UTC	04/07/2007 2100 UTC	Post-frontal Cold Air Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # no aircraft # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt (also on Day X-1: 20, 23 UTC), Meistratzheim # no dropup sondes # Doppler on Wheels operating at site Neuried	Stratocumulus fields present at sunrise develop into cumulus and shallow showers during the day.
<b>IOP-7a</b>	08/07/2007 0400 UTC	09/07/2007 0000 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # DLR Falcon performing ETReC mission upstream of the COPS area # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # no dropup sondes # Doppler on Wheels operating at site Neuried	Passage of a partially convective precipitation system between 09:00-14:00 over the southeastern half of the COPS region. New partly convective precipitation areas move in after 15:00 from the southwest. Another large system affects the northwestern half after 21:00.
<b>IOP-7b</b>	09/07/2007 0000 UTC	09/07/2007 1800 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 2 research flights by DO 128: SupDe HR, SupDe HR + Dropping (4 sondes) # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # no dropup sondes # Doppler on Wheels operating at site Neuried	In the wake of a large area of clouds and precipitation, development of isolated weak showers across the COPS area, but not near the supersites.
<b>SOP-1a</b>	12/07/2007 0500 UTC	12/07/2007 0700 UTC	EUFAR related	SD	OP	FS	WS	# 1 EUFAR research flight by Partenavia (stratocumulus)	
<b>IOP-8a</b>	14/07/2007 0515 UTC	14/07/2007 1830 UTC	High-pressure convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 3 research flights by DO 128, 1 flight by SAFIRE Falcon + Dropping (2 Sondes) # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # no dropup sondes # Doppler on Wheels operating at site Fessenheim near Freiburg	A few cumulus clouds developed over the NE parts of the COPS area in response to the diurnal cycle. No showers.

<b>IOP-8b</b>	15/07/2007 0500 UTC	15/07/2007 1830 UTC	High-pressure convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 2 research flights by DO 128, 2 flights by SAFIRE Falcon, 1 flight by DLR Falcon (stopped earlier due to instrument problems), 1 FAAM BAe flight # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # no dropup sondes # Doppler on Wheels operating at site Fessenheim near Freiburg	Within otherwise nearly cloud-free skies, an isolated line of towering cumulus clouds developed east of the Black Forest. From this line, one shower developed south of Freudenstadt around 14:00.
<b>SOP-1</b>	16/07/2007 0500 UTC	16/07/2007 0900 UTC	EUFAR related	SD	OP	FS	WS	# EUFAR water vapor intercomparison # Lidar and Radar operations active from 0500 to 0900 UTC # 1 research flight by SAFIRE Falcon (water vapor mapping), 1 research flight by DO 128 (profiling over all Supersites) # 1 research flight FAAM BAe (afternoon) # 2 vertical soundings at Hornisgrinde and Achern, 1 at Meistratzheim and Deckenpfronn # Doppler on Wheels operating at site Neuried	
<b>IOP-9a</b>	18/07/2007 0800 UTC	18/07/2007 2000 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 1 research flights by DO 128, 1 flights by SAFIRE Falcon, 1 flight by DLR Falcon, 1 FAAM BAe flight # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # no dropup sondes # Doppler on Wheels operating at site Neuried	After cloudiness and precipitation move out of the COPS area, a few short-lived surface-based convective storms initiate east of the Vosges mountains around 17:00.
<b>IOP-9b</b>	19/07/2007 0600 UTC	19/07/2007 1800 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 1 research flight by DO 128 (MAP pattern), 1 flight by SAFIRE Falcon, 1 FAAM BAe flight # DLR Falcon performing ETReC mission upstream of the COPS area # 1 Learjet flight sampling convective outflow east of the COPS region # 1 afternoon Enduro flight # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Meistratzheim # no dropup sondes # Doppler on Wheels operating at site Neuried	A weakening MCS moved north-northeastward over the north-western COPS region between 7:00 and 10:00. Later, the remainder of the COPS area is also affected by partially convective precipitation. After clearing during the second half of the afternoon, one new surface-based storm develops downstream of the Kaiserstuhl at 19:00.
<b>IOP-9c</b>	20/07/2007 0500 UTC	20/07/2007 2000 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 2 research flights by DO 128 (PreCon-HR and SupDe-HR+dropping), 1 flight by SAFIRE Falcon (MAP pattern+dropping), 2 flights by DLR Falcon (MAP pattern, convective activity) # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # 12 dropup sondes # Doppler on Wheels operating at site Neuried	An weakening old MCS enters the COPS area in the early morning from the southwest. As the evaporatively-cooled air moves over the Black Forest, new cells develop over the northern and eastern Black forest. A very intense and long-lived cell moves northeastward just north of the Swabian Jura range.
<b>SOP 2</b>	21/07/2007 0600 UTC	21/07/2007 1600 UTC	EUFAR related	SD	OP	FS	WS	# EUFAR missions # 1 EUFAR research flight by SAFIRE ATR42, 1 EUFAR research flight by Partenavia # Transfer flight of the Zeppelin NT from Friedrichshafen to Baden-Airpark	

<b>SOP-3</b>	22/07/2007 0700 UTC	22/07/2007 1700 UTC	EUFAR + TRACKS	SD	OP	FS	WS	# EUFAR and TRACKS missions # 1 EUFAR research flight by Partenavia (stratocumulus) # Dimona and Ultralight flights in the Rhine valley south of Baden-Airpark	
<b>IOP-10</b>	23/07/2007 0500 UTC	23/07/2007 1800 UTC	Forced Convection, TRACKS, EUFAR	SD	OP	FS	WS	# COPS, EUFAR and TRACKS missions # most of surface stations operational # most of ground based remote sensing systems operational # 1 EUFAR research flight by ATR42 (OSMOC) # Dimona, Zeppelin NT, Ultralight flights in the Murg valley including vertical profiles # 1 DO 128 research flight (SupDe-HR) # vertical soundings at Achern, Hornisgrinde, Meistratzheim # 2 Doppler on Wheels operating at the eastern and western side of the Black Forest region	A large area of precipitation with a number of embedded convective zones crosses the COPS area during the second half of the afternoon and lingers on well into the evening across the Swabian Jura.
<b>SOP-4</b>	24/07/2007 0600 UTC	24/07/2007 1800 UTC	EUFAR + BAe mission	SD	OP	FS	WS	EUFAR missions and BAe flight # 1 EUFAR research flight by Partenavia (stratocumulus) # 1 EUFAR research flight by ATR42 (OSMOC) # 1 FAAM BAe research flight # vertical soundings at Achern, Meistratzheim	
<b>IOP-11a</b>	25/07/2007 0600 UTC	25/07/2007 1800 UTC	High-Pressure Convection + EUFAR	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # Lidar operations until 2300 UTC in support of EUFAR H2O mission # 2 research flights by DO 128 (FLUX pattern, Lagrange), 2 flights by SAFIRE Falcon (MAP, EUFAR H2O LIDAR), 1 flight by DLR Falcon (FLUX), 1 FAAM BAe flight, Zeppelin, Dimona, Ultralight # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Deckenpfronn, Meistratzheim # hourly tethersonde soundings starting at 0800 UTC in Freiburg # no dropup sondes # Doppler on Wheels operating at site Neuried and DNE8 (failure of DOW at DNE8 after 1100 UTC)	Cumulus developed under a strong inversion at 2500-3000 m, mostly over the mountains.
<b>IOP-11b</b>	26/07/2007 0500 UTC	26/07/2007 1700 UTC	High-Pressure Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 2 research flights by DO 128 (FLUX pattern, Chaff experiment), 1 flight by SAFIRE Falcon (MAP+droppings), 1 flight by DLR Falcon (FLUX), 1 FAAM BAe flight, Dimona (EUFAR), Ultralight (morning TRACKS mission) # vertical soundings at Achern, Hornisgrinde, FZK, Burnhaupt, Meistratzheim # hourly tethersonde soundings until 1630 UTC in Freiburg # no dropup sondes # Doppler on Wheels operating at site Neuried	A little bit of cumulus and some chaff-echoes.
<b>SOP-5</b>	28/07/2007 0900 UTC	28/07/2007 1400 UTC	EUFAR related	SD	OP	FS	WS	# 2 EUFAR research flight by ATR42 (OSMOC) # EUFAR supporting ground based remote sensing observations	
<b>IOP-12</b>	30/07/2007 0800 UTC	30/07/2007 1800 UTC		SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 1 research flights by DO 128 (FLUX pattern, Chaff release), 1 flight by SAFIRE Falcon (MAP), 1 flight by DLR Falcon (FLUX) # vertical soundings at Achern, Meistratzheim # Doppler on Wheels operating at site Neuried (DNW5) and DNE8	Some small cumulus clouds developed.

<b>SOP-6</b>	31/07/2007 1900 UTC	31/07/2007 2200 UTC	EUFAR related	SD	OP	FS	WS	# 1 EUFAR research flight by SAFIRE Falcon, 1900 – 2200 UTC reduced MAP pattern for Lidar intercomparison # EUFAR supporting ground based remote sensing observations # Extra radiosondes launches during the time of the aircraft operation from supersites H, R, and V.	
<b>IOP-13a</b>	01/08/2007 0415 UTC	01/08/2007 2000 UTC	High-pressure convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 2 flights by SAFIRE Falcon (MAP), 2 flights by DLR Falcon (targetted mission to Spain, extended leg into France) # vertical soundings at Achern, Hornisgrinde, FZK and Burnhaupt # Doppler on Wheels: no operations, relocation at site Neuried (DNW5) and Oberiflingen (DNE8)	Cloud-free weather under a ridge.
<b>IOP-13b</b>	02/08/2007 0000 UTC	03/08/2007 0300 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # no aircraft # vertical soundings at Achern, Hornisgrinde, FZK and Burnhaupt # 13 dropup sondes launches at 3 sites (station no: 15, 41, 47) # Doppler on Wheels operating at site Neuried (DNW5) and Oberiflingen (DNE8) starting from 00 UTC # DLR Poldirad operating until 03 UTC the next day	After the passage of an extensive deck of mostly high clouds cool, weakly unstable airflows in from the west. Within this air-mass storms develop around 11:30 along a line that initially stretches from Karlsruhe to the central Vosges. More storms develop as this line moves southeastward.
<b>IOP-14a</b>	06/08/2007 1100 UTC	07/08/2007 1800 UTC		SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # no aircraft # vertical soundings at Achern, Hornisgrinde and Deckenpfronn # Doppler on Wheels operating at site DSW4 (Fessenheim) and DSW2 (Ohnenheim) in the southern side of the COPS area starting at 03 UTC # DLR Poldirad operating from 03 UTC until 18 UTC	Some storms entered the Vosges mountains from the west after 13:30. Convective initiation along the eastern flanks of the Vosges around 16:00. The storms weaken after 17:30 when in the Rhine Valley. A few storms form southeast of the Swabian Jura, too. A small storm system forms 30 km east of Freudstadt around 16:30 and moves southeastward. The convection gradually ceases after 18:00, before starting again after 21:30 over the central Black Forest and later the Rhine Valley and eastern Vosges. A large area of elevated precipitation overspreads the Rhine Valley and eastern Vosges from the south during the second half of the night and early morning. The rest of the 7th of August is cloudy with some local rain.
<b>IOP-14b</b>	08/08/2007 0500 UTC	08/08/2007 2100 UTC		SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # no aircraft # vertical soundings at FZK, Burnhaupt, Achern, Hornisgrinde and Deckenpfronn # no Lidar operations # Doppler on Wheels not operating # DLR Poldirad: standard daytime measurements	Widespread high clouds and stratocumulus between an old MCS is the north and large precipitation system over Switzerland and, later, the SE parts of COPS. One shower initiates in the northeastern Vosges.
<b>IOP-14c</b>	09/08/2007 0700 UTC	09/08/2007 1800 UTC		SD	OP	FS	WS	# IOP addressing heavy precipitation event, only reduced operations required in the COPS area # no aircraft # vertical soundings at Achern # 3-4 launches with IMK Dropup-Sondes and FLYPS between 12 and 16 LT at Supersite H # no Lidar operations # Doppler on Wheels not operating # DLR Poldirad: standard daytime measurements	Southern and central parts of the COPS region are under an area of rain in the early morning. During the mid-morning and early afternoon two new rain areas move from east to west over the COPS area, before the rain ceases for a longer time.

<b>IOP-15a</b>	12/08/2007 0400 UTC	12/08/2007 2100 UTC	High Pressure Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # no aircraft # vertical soundings at Achern, Hornisgrinde and Deckenpfronn # Doppler on Wheels operating at DNW3 (Hohbühn) and DNE6 (Hallwangen)	Storm initiation over the eastern Black Forest and Swabian Jura between 16:00 and 19:00. A single storm also formed over the northern Vosges.
<b>IOP-15b</b>	13/08/2007 0400 UTC	13/08/2007 1800 UTC	High Pressure/Weakly Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # no aircraft # vertical soundings at Achern, Hornisgrinde, FZK and Deckenpfronn # 15 dropup sondes launches at 4 sites (08 Kniebis, 32 Oberreichenbach, 41 Durrweiler, 64 Hopfau) # Doppler on Wheels operating at DNW3 (Hohbühn) and DNE8 (Oberflingen)	Behind a partly convective rain system that passed in the previous night, an upper-level shortwave trough passes the COPS area around noon. A few showers form in the relatively clear air ahead of and near the trough. The two most significant storms formed just east of the northern Vosges and moved across the Rhine Valley eastward into the northern Black Forest. Other showers formed south-west and south of Stuttgart.
<b>IOP-16</b>	15/08/2007 0830 UTC	16/08/2007 0800 UTC	Forced Convection	SD	OP	FS	WS	# most of surface stations operational # most of ground based remote sensing systems operational # 1 FAAM BAe 146 flight (1200 UTC - 1630 UTC) # vertical soundings at Achern, Hornisgrinde, FZK and Deckenpfronn # DLR Poldirad operating throughout the night	The instability remained capped for most of the day -longer than forecast- and only one surface-based, possibly rotating storm crossed the far NW of the COPS area in the evening. Later in the evening, elevated convection approached from the west.
<b>SOP-7</b>	17/08/2007 0800 UTC	17/08/2007 1600 UTC	FAAM BAe mission	SD	OP	FS	WS	# 1 FAAM BAe 146 flight (09 UTC - 14 UTC) # vertical soundings at Achern and Hornisgrinde (08, 11, 14 UTC) # supporting ground based remote sensing observations	
<b>IOP-17a</b>	21/08/2007 0700 UTC	22/08/2007 0000 UTC	Weakly-Forced Convection	SD	OP	FS	WS	# most of available surface stations operational # most of available ground based remote sensing systems operational # no aircraft available # vertical soundings at Achern, Hornisgrinde and Deckenpfronn # DLR Poldirad operating throughout the night	In the evening, two small showers form over the northern Vosges and one in the Rhine Valey near Strasbourg within an area of rather high mid- and upper-level clouds.
<b>IOP-17b</b>	22/08/2007 0700 UTC	22/08/2007 1600 UTC	Weakly-forced Convection	SD	OP	FS	WS	# most of available surface stations operational # most of available ground based remote sensing systems operational # 1 FAAM BAe 146 flight (1200 UTC - 1530 UTC) # vertical soundings at Achern, Hornisgrinde and Deckenpfronn	Ahead of extensive mid- and upper clouds over France, towering cumulus developed over the northern Black Forest in the morning and early afternoon.
<b>IOP-18a</b>	24/08/2007 0500 UTC	24/08/2007 1800 UTC	High Pressure Convection	SD	OP	FS	WS	# most of available surface stations operational # most of available ground based remote sensing systems operational # 1 FAAM BAe 146 flight (1000 UTC - 1410 UTC) # vertical soundings at Achern, Hornisgrinde and Deckenpfronn	Towering cumulus formed over the mountains, mostly the Vosges and Black Forest, and spreaded out agains an inversion while forming stratocumulus. All in all a few very weak showers were produced.
<b>IOP-18b</b>	25/08/2007 0500 UTC	27/08/2007 1800 UTC	High Pressure Convection	SD	OP	FS	WS	# most of available surface stations operational # most of available ground based remote sensing systems operational # no aircraft available # vertical soundings at Achern, Hornisgrinde and Deckenpfronn	Towering cumulus formed over the mountains, mostly the Vosges and Black Forest, but no showers were detected within the COPS area.
<b>SOP-8</b>	29/08/2007 0800 UTC	29/08/2007 1700 UTC	FAAM BAe mission	SD	OP	FS	WS	# 1 FAAM BAe 146 flight (0845 UTC - 1430 UTC) # vertical soundings at Achern, Hornisgrinde and Deckenpfronn # supporting ground-based remote sensing observations	Rain, partly convective, belonging to a frontal zone feel over central and southern parts of the COPS area.