

## GEN 3.5 METEOROLOGICAL SERVICES

### GEN 3.5.1 RESPONSIBLE SERVICE

The authority entrusted with the provision of aeronautical meteorological service is the Lithuanian Hydrometeorological Service.

**Lithuanian Hydrometeorological Service**

Rudnios Str. 6  
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LHMS is responsible for the preparation and dissemination of aerodrome forecasts and warnings, area forecasts for low-level flights, SIGMET and AIRMET information within the Vilnius FIR/UIR, wind shear warnings at Vilnius aerodrome, meteorological consultations and at Vilnius, Kaunas and Palanga aerodromes for:

- weather observing and reporting service;
- meteorological information distribution to the pre-flight briefing office;
- provision of Air Traffic Service units with meteorological information.

Lithuanian Air Force Air Base Air Operations Group Air Operations Support Squadron Meteorological Section provides the meteorological service for air navigation at Šiauliai aerodrome:

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LT-77103 Šiauliai, Lithuania  
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Meteorologist  
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Lithuanian Air Force Air Base Air Operations Group Air Operations Support Squadron Meteorological Section is responsible at Šiauliai aerodrome for:

- weather observing and reporting service;
- pre-flight meteorological information distribution;
- meteorological information distribution to ATS units.

State enterprise “Oro navigacija” is responsible for the provision of Automatic Terminal Information Service (ATIS):

**State enterprise „Oro navigacija“**

Air Traffic Control System Maintenance Division  
B. Karvelio g. 25  
LT-02184 Vilnius, Lithuania  
Phone:+370 706 94 502  
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The service is provided in accordance with the provisions contained in the following ICAO documents:

- Annex 3 Meteorological Service for International Air Navigation;
- Doc 7030 Regional Supplementary Procedures, EUR Region, Part 3 Meteorology;
- Doc 7754 Air Navigation Plan, EUR Region.

Deviations from these provisions are detailed in sub-section [GEN 1.7](#).

### GEN 3.5.2 AREA OF RESPONSIBILITY

Area meteorological watch is provided for the Vilnius FIR/UIR. LHMS acts as the Meteorological Watch Office (MWO) for this area.

GEN 3.5.3 METEOROLOGICAL OBSERVATIONS AND REPORTS

Name of station Location Indicator	Type & frequency of observation/ autom. equip.	Types of MET reports & availability of trend forecasts	Observation System & Site(s)	Hours of operation	Climatological information
1	2	3	4	5	6
KAUNAS INTL EYKA	Half hourly routine, Special obs, AWOS	METAR, SPECI, METAR AUTO, SPECI AUTO, MET REPORT, SPECIAL, MET REPORT AUTO, SPECIAL AUTO	<b>SFC wind sensors:</b> Optoelectronic cup anemometers and wind vanes 320/290 M from DTHR RWY 08/26. <b>RVR EQPT:</b> transmissometers are 280 M from DTHR RWY 08/26 and at mid-point of RWY 08/26. <b>Ceilometers:</b> 826/1055 M FM DTHR RWY 08/26. <b>Pressure, air temperature, air humidity sensors:</b> at the MET Garden 320 M from DTHR RWY 08. Mercury barometer is in the AWOS room.	H24	Climatological tables AVBL
PALANGA INTL EYPA	Half hourly routine, Special obs, AWOS	METAR, SPECI, METAR AUTO, SPECI AUTO, MET REPORT, SPECIAL, MET REPORT AUTO, SPECIAL AUTO	<b>SFC wind sensors:</b> ultrasonic sensors 287 M from DTHR RWY 01 and 305 M from DTHR RWY 19. <b>RVR EQPT:</b> transmissometers are 304 M from DTHR RWY 01 and 331 M from DTHR RWY 19. <b>Ceilometers:</b> laser ceilometers are 871 M from DTHR RWY 01 and 836 M from DTHR RWY 19. <b>Pressure, air temperature, air humidity sensors:</b> pressure sensor is on the mast of wind sensor located at DTHR RWY 19, air temperature and air humidity sensors are on the masts of wind sensors on both of DTHR RWY 01/19. Digital barometer is in the AWOS room.	H24	Climatological tables AVBL
ŠIAULIAI INTL/CIV/ MIL EYSA	Half hourly routine, Special obs, MIDAS IV	METAR, SPECI, METAR AUTO, MET REPORT, SPECIAL, MET REPORT AUTO, TREND	<b>SFC wind sensors:</b> two ultrasonic sensors 374/338 M from THR RWY 14L/32R. <b>RVR EQPT:</b> transmissometers are 390/347 M from THR RWY 14L/32R and at mid-point of RWY 14L/32R. <b>Ceilometers:</b> 1045/655 M from THR RWY 14L/32R. <b>Pressure, air temperature and air humidity sensors:</b> two sensors 374/338 M from THR RWY 14L/32R. Digital barometer on TWR in MET aids MIDAS IV Office.	H24	Climatological tables AVBL

Name of station Location Indicator	Type & frequency of observation/ autom. equip.	Types of MET reports & availability of trend forecasts	Observation System & Site(s)	Hours of operation	Climatological information
1	2	3	4	5	6
VILNIUS INTL EYVI	Half hourly, Special obs, AWOS	METAR, SPECI, MET REPORT, SPECIAL, TREND	<p><b>SFC wind sensors:</b> ultrasonic sensors 450 M from THR RWY 01 and 370 M from THR RWY 19.</p> <p><b>RVR EQPT:</b> transmissometers are 333 M from THR RWY 01, 340 M from THR RWY 19 and at mid-point of RWY 01/19.</p> <p><b>Ceilometers:</b> laser ceilometers 885 M from THR RWY 01 and 1022 M from THR RWY 19.</p> <p><b>Pressure, air temperature, air humidity sensors:</b> pressure sensor is on the mast of wind sensor located at THR RWY 19, air temperature and air humidity sensors are on the masts of wind sensors on both of THR RWY 01/19. Digital barometer is in the AWOS room.</p>	H24	Climatological tables AVBL

### 1 Reports of surface weather observations

Reports of surface weather observations consist of:

#### **Routine reports**

EYVI AD – half-hourly report (H+20 and H+50) in METAR and MET REPORT forms;

EYKA AD, EYPA AD and EYSA AD – half-hourly report (H+20 and H+50) in METAR, MET REPORT, METAR AUTO and MET REPORT AUTO form.

#### **Special reports**

Special observations are made between the routine observations whenever significant deteriorations or improvements of weather conditions in accordance with ICAO Annex 3 change to/or pass through the established values. Additionally special criteria for the change of QNH and RWY in use are used. Reports of special observations are issued as:

- SPECI for dissemination beyond the aerodrome of origin,
- local special (SPECIAL) for dissemination at the aerodrome of origin.

METAR, SPECI, METAR AUTO and SPECI AUTO are disseminated beyond the aerodrome of origin via AFTN channel. METAR for EYVI is included in Riga VOLMET broadcast.

Local reports are displayed at ATS units displays and meteorological information from local reports is disseminated via ATIS broadcasts.

Automatic reports are made without human intervention.

TREND forecast is appended into METAR/SPECI and local regular and special reports for EYVI and EYSA.

Aerodrome colour state information (for military use only) is included in METAR/SPECI and TREND at EYSA.

### 2 Observing Systems and Operating Procedures

At all aerodromes automated weather observing systems (AWOS) are installed. Human meteorological observations (visibility, cloud type and/or amount, some of present weather phenomenon, state of the runway information and supplementary information) are made additionally to automated observations. Appropriate ATS units, briefing and aerodrome offices have a real time weather displays with all data measured by AWOS including data inserted manually by human observers. At EYVI, EYKA and EYPA all displayed data are updated in 10 s intervals. At EYSA displayed data values on the monitors are updated when particular data values are measured by AWOS.

**Surface wind.** Surface wind speed and direction are measured by cup anemometers and wind vanes or ultrasonic sensors located at both ends of the runway near THR at a height of 10 M above the ground surface.

EYKA wind sensors are the cup anemometers, EYVI, EYPA, EYSA wind sensors – the ultrasonic. The unit knot (KT) is used to indicate surface wind speed. 10 minutes average of the true wind direction and wind speed, variation in wind direction (consisting of the two extreme directions between which the wind has varied during the past 10 minutes) and variation from the mean wind speed (gust) during the past 10 minutes are reported in METAR. The wind data from the wind sensor representing TDZ zone of the current RWY in use is always included in a current reports. The magnetic wind direction and speed (2-minute average), variation in wind direction and variations from the mean wind speed (gusts) (during the past 10-minutes) are reported in local reports and transmitted to ATIS for broadcasts. On ATS unit's real time weather displays all wind data, including crosswind and headwind/tailwind values, relating to the wind sensors installed near the runway, are displayed.

**Visibility.** Visibility is measured by transmissometers at a height of approximately 2.5 M above RWY or observed visually by human observer (if necessary) and reported in metres.

At all aerodromes reported visibility in METAR/SPECI is a prevailing visibility (10-minute average median value) determined from all measuring sites. When the visibility is not the same in different directions and the lowest visibility is different from the prevailing visibility and

- a) less than 1500 M or
- b) less than 50% of the prevailing visibility and less than 5000 M,

the lowest visibility is also included in METAR/SPECI (with or without indication of its general direction).

At EYKA and EYPA automatic METAR/SPECI reports a visibility value (10-minute average) from the measuring site representative to TDZ of the current RWY in use is included.

At EYVI, EYKA and EYPA in local reports a visibility value (1-minute average) from the measuring site representative to TDZ of the current RWY in use is included. At EYSA in local reports a visibility values (1-minute average) from all measuring sites are included.

At all aerodromes on ATS unit's real time weather displays visibility data (1-minute average) from all measuring sites representing all zones along the runway are displayed.

**Runway Visual Range.** Assessment of the runway visual range (RVR) is carried out by means of transmissometers.

The RVR assessments are performed using MOR values from transmissometers and information of background luminance and runway light intensity. The RVR is reported in meters throughout periods when either the visibility or the RVR is less than 1500 M. The lower limit for RVR reporting is 50 M and 2000 M is the upper limit. The RVR reported in METAR is RVR (10 minute average) assessed using MOR from measuring site representative to TDZ of the current RWY in use and using 100% runway light intensity.

The RVR reported in local reports at EYVI, EYKA and EYSA is RVR (1 minute average) values assessed using MOR from all measuring sites representing all zones along the runway and using runway light intensity:

- a) for a runway with the lights switched on, the light intensity actually in use on that runway; and
- b) for a runway with lights switched off (or at the lowest setting pending the resumption of operations), the optimum light intensity that would be appropriate for operational use in the prevailing conditions.

The RVR reported in local reports at EYPA is RVR (1 minute average) values assessed using MOR from measuring sites representing both zones along the runway and using 100% runway light intensity.

On ATS unit's real time weather displays RVR data (1-minute average) from all measuring sites representing all zones along the runway are displayed.

**Present weather.** The present weather phenomena are observed by means of a present weather sensors, integrated into transmissometers, lightning detector and additionally by the observer.

Present weather phenomena are reported in accordance with ICAO Annex 3 requirements.

**Clouds.** Laser ceilometers are used at all aerodromes to determine the height of cloud base and cloud amount or vertical visibility in case when the sky is obscured and cloud base is not detected.

They are installed at ILS MM at the both ends of the RWY. The height of cloud base or vertical visibility is reported in feet above the aerodrome elevation. In METAR/SPECI reports the height of cloud base is reported in steps of 100 feet up to 10000 feet. The ICAO recommended algorithm is used for cloud base and amount calculations.

In local reports at EYVI, EYKA and EYPA to report the height of cloud base steps of 50 FT up to and including 300 FT and steps of 100 FT between 300 FT and 10 000 FT are applicable, and the vertical visibility - steps of 50 FT up to and including 300 FT and steps of 100 FT between 300 FT and 2 000 FT. In local reports at EYSA to report the height of cloud base steps of 100 FT up to 10 000 FT are applicable, and the vertical visibility – steps of 100 FT up to 2000 FT. Only cloud of operational significance (a cloud with the height of cloud base below 5000 feet or a cumulonimbus cloud or a towering cumulus cloud at any height) is included in local reports. Type

of cloud, if applicable, is inserted to reports (except fully automatic reports) by a human observer. In automatic reports at EYKA and EYPA type of clouds is indicated as not available by the use of code ///. In automatic reports at EYSA type of clouds are not indicated as not available.

On ATS unit's real time weather displays the data on the height of cloud base, amount and type of clouds are displayed. At EYVI ATS weather displays instant measured data (in 30 s intervals) on cloud height is displayed additionally.

**Air temperature and dew point temperature.** Air temperature and air humidity (from which the dew point temperature is calculated) at EYKA are measured by sensors placed in a solar radiation protection 2 M above the ground in the meteorological garden, at EYVI, EYPA, EYSA – on the masts of wind sensors at the both ends of the RWY. All measured values are updated in 60-second intervals. On ATS unit's real time weather displays the data on the air and dew point temperature are displayed.

**Atmospheric pressure.** Digital aviation barometers are used as main and backup sensors for QNH and QFE values calculations. All values are updated in 60-second intervals. The QNH value in steps of whole hectopascal is included in all reports. On ATS unit's real time weather displays QNH and QFE values in hPa are displayed. At EYVI, EYKA and EYPA ATS weather displays QNH and QFE values in Hg and mmHg units are displayed additionally. At EYSA ATS weather displays QNH and QFE values in mmHg units are displayed additionally.

**Supplementary information.** In METAR and SPECI reports information on wind shear, based on aircraft reports, and state of the RWY provided by aerodrome service units are reported, as applicable. In local reports (except automatic reports) information on wind shear along the take-off path or approach path and other supplementary information received from aircrafts via ATS units (including severe and moderate turbulence or icing) is included by a human observer.

RWY surface temperature, water film height and freezing points are measured by the road sensors at EYSA at both ends of the RWY.

## GEN 3.5.4 TYPES OF SERVICES

### 1 MET information for pre-flight planning

At EYVI crew members and/or other flight-related staff are consulted on request. At EYKA, EYPA and EYSA consultations are provided only by phone by the Aviation Forecasts Division of the Forecasts and Warnings Department established at EYVI. Flight documents are provided to international and, when necessary, to local flights.

Flight documents include: a charts of significant meteorological phenomena, a charts of upper wind and upper air temperatures and the latest available METAR/SPECI reports and TAF forecasts of the departure, destination and alternate aerodromes; the latest valid SIGMET information along the flight route and AIRMET information for low level flights.

*Note: At the request of EYSA, EYKA, EYPA the required flight documents are sent by fax or e-mail from Aviation Forecasts Division of the Forecasts and Warnings Department at EYVI.*

### 2 MET information for general aviation

Forecasts for general aviation (IFR and VFR) low-level flights are prepared in a GAMET format in abbreviated plain language and cover information for traffic below FL100. GAMET forecasts are prepared every 6 hours at daytime and other time under consumers' agreement and are transmitted not later than 1 hour prior to the beginning of their validity period.

GAMET forecasts consist of two sections: section 1 includes surface wind speed, ground visibility and phenomena worsening visibility, significant weather phenomena and clouds (cloud amount and base above the ground), icing, turbulence, valid SIGMET information for Vilnius FIR; section 2 comprises pressure systems and forecasts of location, movement and development thereof, upper winds and upper air temperature, other clouds, not included into section 1, the freezing level, the lowest forecasted QNH value, the sea level temperature and condition (height of waves), volcanic clouds.

If necessary, corrections of GAMET forecasts are prepared and AIRMET information is issued.

GAMET forecasts are prepared for five areas, as shown in the table at the end of this chapter.

Forecasts are available at all Lithuanian aerodromes.

### 3 Low-level significant weather (SWL) charts

SWL charts are issued: at 0600 UTC for fixed forecast time of 0900 UTC and at 0900 UTC for fixed forecast time of 1200 UTC. The chart provides a forecast of in-flight conditions for low-level flight operations up to FL100 within the Vilnius FIR and further into Europe and covers the period of validity from 3 hour before to 3 hour after the fixed

time. The chart shows the position, direction and speed of movement of surface fronts, pressure centres and boundaries of significant weather zones for the fixed time. The appropriate abbreviation "AMD" and "COR" indicates an amended and corrected forecast chart. Height indications in this form are given in hectofeet above ground level (AGL). SWL charts are distributed according to agreement with users.

#### 4 Other meteorological information

The weather satellite picture covering EUR region is provided and displayed at the pre-flight briefing office in Vilnius. Information obtained from two ground based meteorological radars (Doppler type) installed at Laukuva (West part of Lithuania) and Traku Voke (not far from Vilnius aerodrome) is also available for pilots at pre-flight briefing office in Vilnius.

Air-sport users (gliders, hot air balloon pilots) if require some specific types of meteorological information, shall apply to LHMS and agree on the terms of providing required information.

#### GEN 3.5.5 NOTIFICATION REQUIRED FROM OPERATORS

1 An operator, requiring meteorological service or changes in existing meteorological services: consultations, flight documents or any other meteorological information, which is necessary for scheduled flights, shall notify the Aviation Forecasts Division of the Forecasts and Warnings Department, sufficiently in advance, not later than one month before any:

- a) new routes or new types of flight operations are planned;
- b) changes of lasting character are to be made in scheduled operations;
- c) other changes, affecting the provision of meteorological service, are planned.

2 In the case of a non-scheduled flight, the Aviation Forecasts Division of the Forecasts and Warnings Department shall be notified in advance as follows:

- a) for flights within Europe, not later than 3 hours before the time at which briefing, consultation and/or flight documentation are required;
- b) for flights outside Europe, not later than 12 hours before briefing, consultation and/or flight documentation are desired for flights outside Europe.

3 The notification about individual flights for the Aviation Forecasts Division of the Forecasts and Warnings Department should contain the following information:

- a) departure aerodrome and estimated time of departure;
- b) destination and estimated time of arrival;
- c) flight route and cruising level;
- d) alternate aerodromes;
- e) type of flight (VFR or IFR);
- f) type of meteorological information necessary for a flight crew, either flight documentation and/or briefing or consultation;
- g) time for which briefing, consultation and/or flight documentation is required.

When a flight is delayed, advanced or cancelled, the Aviation Forecasts Division of the Forecasts and Warnings Department shall be notified by the operator or a flight crew member as soon as possible.

#### GEN 3.5.6 AIRCRAFT REPORTS

When flying over Vilnius FIR/UIR, flight crews shall report, as soon as practicable, on air-observations made during any phase of the flight to a respective ATS unit:

- a) Special air-reports shall be forwarded when moderate or severe turbulence, moderate or severe icing, thunderstorm, storm, hail, squall, volcanic ash cloud are encountered;
- b) Other air-reports (non-routine) shall be forwarded when meteorological conditions (e.g., wind shift) are encountered, which in the pilot's-in-command judgement, might have an impact on flight safety, or significantly reduce the efficiency of flights of other aircraft.

Observations which have not been possible to report during the flight shall be reported as soon as practicable on arrival.

The ATS unit always passes the observation data from the aircraft to the Aviation Forecasts Division of the Forecasts and Warnings Department.

#### GEN 3.5.7 VOLMET SERVICE

Not applicable.

**GEN 3.5.8 SIGMET AND AIRMET SERVICE**

Name of MWO Location Ind.	Hours	FIR or CTA served	Type of SIGMET/ Validity	Specific Procedures	ATS Unit served	Additional Information
1	2	3	4	5	6	7
Aviation Forecasts Division of the Forecasts and Warnings Department EYVI	H24	Vilnius FIR	SIGMET / not exceed 4 HR, VA SIGMET / not exceed 6 HR  AIRMET / not exceed 4 HR	NIL	Vilnius ACC/ APP	NIL

**1 Area meteorological watch service**

The Aviation Forecasts Division of the Forecasts and Warnings Department performs the functions of the Meteorological Watch Office (MWO).

The Aviation Forecasts Division of the Forecasts and Warnings Department prepare SIGMET information for Vilnius FIR on the following present and forecasted significant meteorological phenomena:

- a) thunderstorm:
  - obscured,
  - embedded,
  - frequent,
  - line squall,
  - obscured with heavy hail,
  - embedded with heavy hail,
  - frequent with heavy hail,
  - line squall with heavy hail;
- b) turbulence:
  - severe turbulence;
- c) icing:
  - severe icing,
  - severe icing due to freezing rain;
- d) volcanic ash clouds;
- e) radioactive clouds.

SIGMET information is prepared. The number indicates the quantity of SIGMET information, issued for the FIR since 0001 UTC of that day. The period of validity of SIGMET information is not more than 4 hours. In preparing SIGMET for volcanic ash clouds (VA SIGMET), the MWO Vilnius will use the relevant advisory information received from the Volcanic Ash Advisory Centres (VAAC) in London or Toulouse. The period of validity VA SIGMET messages for Vilnius FIR is extended up to 6 hours. The information is transmitted to international meteorological data banks.

The Aviation Forecasts Division of the Forecasts and Warnings Department forwards its own and adjacent MWOs SIGMET information to ACC and ATC.

AIRMET information, prepared in abbreviated plain language (English), is issued for traffic operating below FL100, if present and/or forecasted weather phenomena (in accordance with para. 2.14 of Appendix 6, Part II, ICAO Annex 3), which may affect the safety of low-level flights, have not been included into section 1 of GAMET forecast.

AIRMET information is transmitted to international meteorological data bank and to ACC and ATC.

Wind shear reports from aircraft are included in METAR/SPECI and local reports (except automatic).

**2 Warning Service**

Aerodrome warnings for EYVI, EYKA and EYPA aerodromes are prepared by the Aviation Forecasts Division of the Forecasts and Warnings Department. Warnings shall give information of meteorological conditions which can adversely affect the parked aircraft and the aerodrome facilities or impede RWY cleaning. Warnings are prepared if one or more of the following phenomena occurs or is expected to occur at the airport:

For EYVI:

- freezing precipitation;
- heavy snowfall lasting longer than 2 hours;
- wind (its velocity being 15 m/s or more).

For EYKA:

- freezing precipitation;
- heavy snowfall lasting longer than 2 hours;
- air temperature change from positive to negative value.

For EYPA:

- freezing precipitation;
- heavy snowfall lasting longer than 2 hours;
- wind (speed and/or gusts being 25 m/s or more);
- squall.

Text of the aerodrome warnings is prepared in Lithuanian language and numerical values and is distributed according to interoperability of services. The validity period of the aerodrome warning is not more than 4 hours.

Warnings about wind shear for EYVI aerodrome are based on aircraft reports, received via ATS, and are prepared in abbreviated plain language using approved ICAO abbreviations and numerical values and are distributed according to interoperability of services. The validity period of the wind shear warning is not more than 1 hour. Additionally information on wind shear, received from ATS, is included in METAR/SPECI and local reports.

Aerodrome and wind shear warnings are understood to cancel itself automatically at the end of its validity period. If the phenomenon persists a new warning will be issued with the next sequence number and for a further period of validity. The numbering of warnings starts every day at 0001 UTC separately for each aerodrome.

### GEN 3.5.9 OTHER AUTOMATED METEOROLOGICAL SERVICES

The purpose of the Automatic Terminal Information Service is provision of information to the arriving and departing aircraft on the current conditions in the terminal area. An ATIS broadcast contains all information necessary for a pilot to make a final decision on approaching, landing or taking-off.

In ATIS decoded messages MET REPORT AUTO, the value NOT AVBL of the field CLOUD TYPE will be omitted and not broadcasted.

### GEN 3.5.10 METEOROLOGICAL BRIEFING AT AERODROMES

Details of meteorological briefing at aerodromes are presented in the individual aerodrome sub-section AD 2.

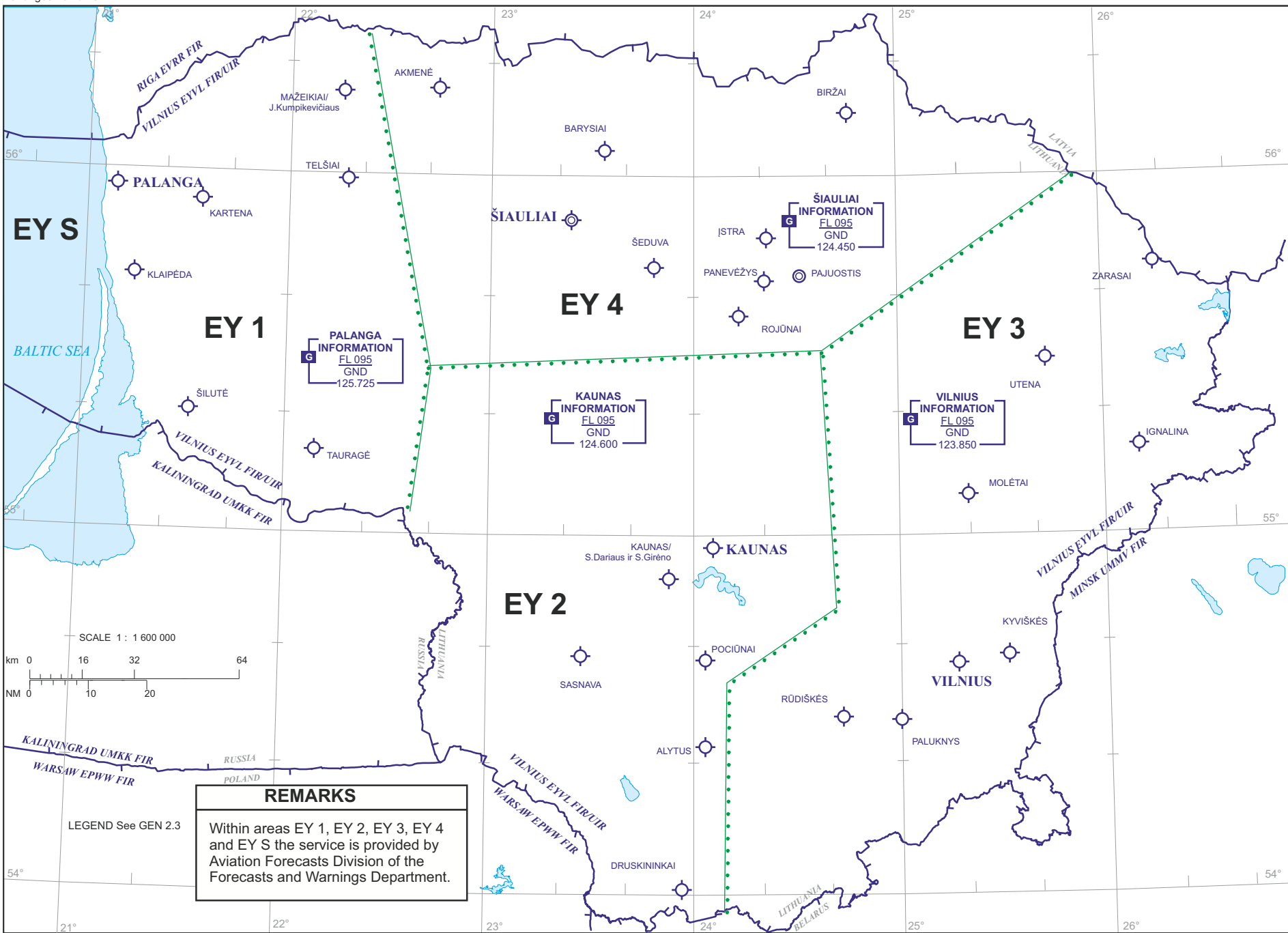
Abbreviations used for flight documentation, charts and types of consultation provided at in the individual aerodrome table AD 2.11.

Charts	
<b>S</b> - Surface analysis (current chart)	<b>T</b> - Tropopause chart
<b>U</b> - Upper air analysis (current chart)	<b>SWH</b> - Significant weather high (chart)
<b>P</b> - Prognostic upper air chart	<b>SWM</b> - Significant weather medium (chart)
<b>W</b> - Significant weather chart	<b>SWL</b> - Significant weather low (chart)

Briefing /consultation provided	Types of flight documentation
<b>P</b> - Personal consultation	<b>C</b> - Charts
<b>T</b> - Telephone	<b>CR</b> - Cross-section
<b>TV</b> - Closed circuit television	<b>PL</b> - Abbreviated plain language texts
<b>D</b> - Self-briefing display	



Changes: remarks.



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