

**GEN 3.5 METEOROLOGICAL SERVICES****1. RESPONSIBLE SERVICE**

The meteorological services for international civil aviation in the Republic of Kazakhstan are provided by:  
**RSE “Kazaeronavigatsia”**

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This service is provided in accordance with the provisions contained in the following ICAO documents:

Annex 3. Meteorological Service for International Air Navigation.

Doc 9377. Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services.

Differences to the ICAO Standards and Recommended Practices are detailed in subsection [GEN-1.7](#).

**2. AREA OF RESPONSIBILITY**

Meteorological service is provided within Flight information regions (FIR) of the Republic of Kazakhstan

**3. METEOROLOGICAL OBSERVATIONS AND REPORTS**

In the METAR and SPECI reports, in the local regular and local special reports, information about the friction coefficient is transmitted only in the form of a standard numeric value.

**Table 1: Meteorological observations and reports**

Name of station/ Location indicator	Type & frequency of observation/ automatic observing equipment	Types of meteorological reports and additionally included information	Observation System & Site(s)	Hours of operation	Climatological information
1	2	3	4	5	6
AKTAU/UATE	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
AKTOBE/UATT	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
ALMATY/UAAA	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
ASTANA/UACC	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL

Table 1: Meteorological observations and reports

Name of station/ Location indicator	Type & frequency of observation/ automatic observing equipment	Types of meteorological reports and additionally included information	Observation System & Site(s)	Hours of operation	Climatological information
1	2	3	4	5	6
ATYRAU/UATG	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
BALKHASH/ UAAH	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Climatological tables AVBL
KARAGANDA/ UAKK	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
KOKSHETAU/ UACK	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Climatological tables AVBL
KOSTANAY/ UAUU	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
KYZYLORDA/ UAOO	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
PAVLODAR/ UASP	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
PETROPAVLOV SK/UACP	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Climatological tables AVBL
SEMEY/UASS	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Climatological tables AVBL
SHYMKENT/ UAII	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL

Table 1: Meteorological observations and reports

Name of station/ Location indicator	Type & frequency of observation/ automatic observing equipment	Types of meteorological reports and additionally included information	Observation System & Site(s)	Hours of operation	Climatological information
1	2	3	4	5	6
TALDYKORGAN/ UAAT	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Climatological tables AVBL
TARAZ/UADD	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
TURKISTAN/ UAIT	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Nil
URALSK/UARR	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
URDZHAR/ UASU	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Nil
USHARAL/UAAL	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Nil
UST- KAMENOGORS K/UASK	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	H24	Climatological tables AVBL
ZAISAN/UASZ	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Nil
ZHEZKAZGAN/ UAKD	Half hourly routine plus special observations/ automatic: Nil	METAR SPECI TREND	Automated meteorological information- measuring system <sup>1</sup>	HO	Nil

1.AWOS «KRAMS-4» is designed for automatic remote observation and monitoring of main meteorological conditions at an aerodrome, processing of this information, generation of meteorological reports, displaying, recording and dissemination of meteorological information through telecommunication channels to departing and arriving aircraft.

#### 4. TYPES OF SERVICES

Personal briefing and meteorological consultation for flight crews members and/or other flight operation personnel are provided by aerodrome meteorological office at all airports listed in the AD 1.3

Limited flight documentation is normally provided for domestic flights. For international flights, the flight documentation comprises a significant weather chart, an upper wind and upper air temperature chart, and the latest available aerodrome forecast for the destination and its alternate aerodromes.

Automated computer systems, telephone communication, AFTN communication channels and meteorological telecommunication network are used for the meteorological information exchange between aerodrome services and other users concerned. ATIS is used for broadcasting meteorological information to aircraft in flight. Actual meteorological information is broadcasted regularly and continuously according to the GEN 3.5.7.

Aerodrome meteorological office provides products, distributed in the framework of the WAFS (SIGWX chart FL 250-630, wind and temperature chart issued by WAFS LONDON or HYDROMETEOROLOGICAL CENTRE OF RUSSIA four times a day at 00.00, 06.00, 12.00 and 18.00 UTC).

Information about volcanic ash and a tropical cyclone are based on Advisory information provided by the relevant VAAC and TCAC.

Terminal aerodrome forecast (TAF) is issued in the prescribed time and comprises short message about expected weather conditions at an aerodrome during a specified period.

For the planning of low level flights below flight level 100, forecasts are issued in GAMET format. They are issued every day and kept up to date every 3 hours starting from 00.00 UTC. AIRMET messages are issued concerning the occurrence and/or expected occurrence of specified en-route weather phenomena, which have not been included in Section I of the GAMET forecast.

Area of responsibility for GAMET/AIRMET issued:

*Note: Boralday aerodrome belongs to the A5 FIC Area*

Name of aerodrome meteorological office/ Location indicator	FIC area	Lateral limits
1	2	3
AKTOBE/UATT	T1 FIC Area	N505800 E0613000 - N502331 E0622455 - N500137 E0622819 - N483738 E0624054 - N475001 E0593111 - N465000 E0570000 - N485000 E0551000 - N485930 E0522738 - N504318 E0551552 then along the state BDRY with Russia to N505800 E0613000
	T3 FIC Area	N483738 E0624054 - N471135 E0643220 - N461214 E0614508 - N460903 E0613915 - N445159 E0600655 - then along the state BDRY with Uzbekistan to - N452307 E0574000 - N454418 E0574000 - N463851 E0564100 - N465000 E0570000 - N475001 E0593111 - N483738 E0624054
ATYRAU/UATG	T2 FIC Area	N485930 E0522738 - N485000 E0551000 - N465000 E0570000 - N463851 E0564100 - N454418 E0574000 - N452307 E0574000 - N452130 E0534647 - N455500 E0493000 - N460800 E0492600 - N461400 E0492600 - N461800 E0491600 - N462130 E0491148 - N462224 E0491112 then along the state BDRY with Russia to N490704 E0470207 - N485930 E0522738
	T7 FIC Area	N463851 E0564100 - N454418 E0574000 - N452307 E0574000 then along the state BDRY with Uzbekistan to N435141 E0555948 - N445034 E0541914 - N452130 E0534647 - N463851 E0564100

Name of aerodrome meteorological office/ Location indicator	FIC area	Lateral limits
1	2	3
AKTAU/UATE	T5 FIC Area	N453219 E0523200 – N444919 E0520844 – N442238 E0520908 – N434133 E0522455 – N422611 E0502811 – N425000 E0493000 – N455500 E0493000 – N453219 E0523200
	T6 FIC Area	N453219 E0523200 – N452130 E0534647 – N445034 E0541914 – N435141 E0555948 then along the state BDRY with Uzbekistan to N411900 E0560000 then along the state BDRY with Turkmenistan to N414700 E0522800 – N420000 E0513000 – N422611 E0502811 – N434133 E0522455 – N442238 E0520908 – N444919 E0520844 – N453219 E0523200
URALSK/UARR	T4 FIC Area	N504318 E0551552 - N485930 E0522738 - N490704 E0470207 then along the state BDRY with Russia to N504318 E0551552
ASTANA/UACC	N1 FIC Area	N522006 E0672830 - N522724 E0681000 - N523100 E0684500 - N523730 E0702500 - N524548 E0713006 – N524630 E0715024 – N524724 E0723406 – N523548 E0734324 – N513148 E0734848 – N511706 E0734530 – N510200 E0740200 – N505342 E0741748 – N504948 E0743606 – N504730 E0745900 – N503331 E0753513 – N501116 E0723844 – N503136 E0680751 – N521149 E0673350 - N522006 E0672830
KOKSHETAU/UACK	N2 FIC Area	N540653 E0710841 - then along the state BDRY with Russia to - N532838 E0733027- N524612 E0734430 - N524218 E0734248 - N523548 E0734324 - N524724 E0723406 - N524630 E0715024 - N524548 E0713006 - N523730 E0702500 - N523100 E0684500 - N522724 E0681000 - N522006 E0672830 - N532806 E0664618 - N540306 E0690830 - N540500 E0704712 - N540653 E0710841
PETROPAVLOVSK/UACP	N3 FIC Area	N543735 E0660017 - then along the state BDRY with Russia to - N540653 E0710841 - N540500 E0704712 - N540306 E0690830 - N532806 E0664618 - N543735 E0660017
KOSTANAY/UAUU	N4 FIC Area	N543735 E0660017 - N532806 E0664618 - N521149 E0673350 – N512154 E0675222 - N502331 E0622455 - N505800 E0613000 - then along the state BDRY with Russia to - N543735 E0660017
	N5 FIC Area	N512154 E0675222 - N503136 E0680751 - N494400 E0683100 - N493036 E0670430 - N491230 E0663936 - N485848 E0654236 - N483738 E0624054 - N502331 E0622455 - N512154 E0675222
KARAGANDA/UAKK	N6 FIC Area	N503331 E0753513 - N494800 E0761100 - N485000 E0761100 - N480759 E0741658 - N480000 E0714900 - N483700 E0704200 - N494100 E0693200 – N494400 E0683100 – N503136 E0680751 – N501116 E0723844 – N503331 E0753513

Name of aerodrome meteorological office/ Location indicator	FIC area	Lateral limits
1	2	3
ZHEZKAZGAN/UAKD	N7 FIC Area	N494400 E0683100 - N494100 E0693200 - N483700 E0704200 - N480000 E0714900 - N450440 E0715506 - N452504 E0692427 - N471135 E0643220 - N483738 E0624054 - N485848 E0654236 - N491230 E0663936 - N493036 E0670430 - N494400 E0683100
PAVLODAR/UASP	N8 FIC Area	N533000 E0733000 - then along the state BDRY with Russia to - N510142 E0795110 - N505513 E0791803 - N504125 E0781025 - N494800 E0761100 - N503331 E0753513 - N504730 E0745900 - N504948 E0743606 - N505342 E0741748 - N510200 E0740200 - N511706 E0734530 - N513148 E0734848 - N523548 E0734324 - N524218 E0734248 - N524612 E0734430 - N533000 E0733000
ALMATY/UAAA	A1 FIC Area	N432236 E0770503 - N433001 E0804359 - then along the state BDRY with P.R. of China - N421239 E0801028 - then along the state BDRY with Kyrgyzstan to - N431348 E0741934 - N434446 E0741052 - N432236 E0770503
	A2 FIC Area	N462000 E0812000 - N453000 E0821955 - then along the state BDRY with P.R. of China to - N442731 E0802042 - N440745 E0780904 - N462000 E0812000
	A3 FIC Area	N463927 E0775115 - N461807 E0783955 - N462000 E0812000 - N440745 E0780904 - N442731 E0802042 - then along the state BDRY with P.R. of China to - N433001 E0804359 - N432236 E0770503 - N463927 E0775115
	A4 FIC Area	N440648 E0744228 - N432236 E0770503 - N434446 E0741052 - N440648 E0744228
	A5 FIC Area	N485000 E0761100 - N465357 E0771718 - N463927 E0775115 - N432236 E0770503 - N440648 E0744228 - N441502 E0745425 - N450440 E0715506 - N480000 E0714900 - N480759 E0741658 - N485000 E0761100
SEMEY/UASS	A6 FIC Area	N510142 E0795110 - then along the state BDRY with Russia to - N504706 E0815242 - N503130 E0813218 - N493500 E0810300 - N484600 E0805300 - N475508 E0802710 - N461942 E0802000 - N461808 E0784001 - N465357 E0771718 - N485000 E0761100 - N494800 E0761100 - N504125 E0781025 - N505513 E0791803 - N510142 E0795110
UST-KAMENOGORSK/UASK	A7 FIC Area	N490654 E0871718 - then along the state BDRY with P.R. of China to - N453313 E0821612 - N462000 E0812000 - N461942 E0802000 - N475508 E0802710 - N484600 E0805300 - N493500 E0810300 - N503130 E0813218 - N504706 E0815242 - then along the state BDRY with Russia to - N490654 E0871718
SHYMKENT/UAIL	D1 FIC Area	N432534 E0672754 - N431800 E0682200 - N431932 E0683446 - N430659 E0693632 - N422000 E0705300 - then along the state BDRY with Kyrgyzstan to - then along the state BDRY with Uzbekistan to - N430221 E0654313 - N432534 E0672754

Name of aerodrome meteorological office/ Location indicator	FIC area	Lateral limits
1	2	3
TARAZ/UADD	D2 FIC Area	N452504 E0692427 – N450440 E0715506 – N441502 E0745425 – N434446 E0741052 – N431348 E0741934 – then along the state BDRY with Kyrgyzstan to – N424720 E0714334 – N423528 E0713630 - N423620 E0711030 - then along the state BDRY with Kyrgyzstan to – N422000 E0705300 – N430659 E0693632 – N431932E0683446(VOR TRK)–N440138 E0684518 - N452504 E0692427
KYZYLORDA/UAOO	D3 FIC Area	N462455 E0664655 - N452504 E0692427 – N440138 E0684518 – N431932 E0683446–N431800E 0682200 - 432534N0672754E - N430221 E0654313 - then along the state BDRY with Uzbekistan to - N433808 E0634822 - N444145 E0653349 - N462455 E0664655
	D4 FIC Area	N471135 E0643220 - N462455 E0664655 – N444145 E0653349 - N433808 E0634822 - then along the state BDRY with Uzbekistan to - N445159 E0600655 - N460903 E0613915 - N461214 E0614508 - N471135 E0643220

GAMET/AIRMET area scheme is presented in GEN 3.5.10.

Aerodrome warning messages are issued for air safety support aviation and equipment protection.

Observation of the spatial distribution of cloud clusters, thunderstorm cells, precipitations areas as well as their movement and evolution are carried out at aerodromes equipped with meteorological radars.

Wind shear detection is carried out if there is a special equipment provided at an aerodrome or by pilot reports of arriving or departing aircraft.

## 5. NOTIFICATION REQUIRED FROM OPERATORS

Notification from operators in respect of meteorological service provision or its changes shall be sent to aeronautical service provider, RSE "Kazaeronavigatsia". The minimum period of notification is determined by agreement between the aeronautical service provider and the operator.

## 6. AIRCRAFT REPORTS

Air-reports and aircraft observations are reported in accordance with Chapter 5, Annex 3 and Appendix 1 Doc. 4444 ICAO. There are no compulsory AIREP reporting points in the airspace of the Republic of Kazakhstan. All aircraft report special air-reports.

## 7. VOLMET SERVICE

Meteorological information about the weather at an aerodrome is included in the ATIS messages and broadcasted by the stations listed in the following table.

Table 2: VOLMET service

Name of station	CALL SIGN Identification (EM)	Frequency MHZ	Broadcast period	Hours of service	Aerodromes/ Heliports included	REP, SIGMET INFO, FCST & Remarks
1	2	3	4	5	6	7
AKTAU	AKTAU - ATIS (A3E)	EN 130.100 RU 126.200	Continuously	H24	Aktau	Local reports, TREND(EN/ RU)

Table 2: VOLMET service

Name of station	CALL SIGN Identification (EM)	Frequency MHZ	Broadcast period	Hours of service	Aerodromes/ Heliports included	REP, SIGMET INFO, FCST & Remarks
1	2	3	4	5	6	7
AKTOBE	AKTOBE - ATIS (A3E)	EN 126.000 RU 127.800	Continuously	H24	Aktobe	Local reports, TREND(EN/ RU)
ALMATY	ALMATY - ATIS (A3E)	EN 129.800 RU 135.100	Continuously	H24	Almaty	Local reports, TREND(EN/ RU)
ASTANA	ASTANA - ATIS (A3E)	EN 129.500 RU 128.300	Continuously	H24	Astana	Local reports, TREND(EN/ RU)
ATYRAU	ATYRAU - ATIS (A3E)	EN 127.400 RU 126.600	Continuously	H24	Atyrau	Local reports, TREND(EN/ RU)
BALKHASH	BALKHASH - ATIS (A3E)	EN 126.600 RU 126.200	HO	As AD	Balkhash	Local reports, TREND(EN/ RU)
KARAGANDA	KARAGANDA - ATIS (A3E)	EN 135.800 RU 127.800	Continuously	H24	Karaganda	Local reports, TREND(EN/ RU)
KOKSHETAU	KOKSHETAU - ATIS (A3E)	EN 134.900 RU 126.000	Continuously	As AD	Kokshetau	Local reports, TREND(EN/ RU)
KOSTANAY	KOSTANAY - ATIS (A3E)	EN 118.500 RU 126.800	Continuously	As AD	Kostanay	Local reports, TREND(EN/ RU)
KYZYLORDA	KYZYLORDA - ATIS (A3E)	EN 134.900 RU 122.900	Continuously	As AD	Kyzylorda	Local reports, TREND(EN/ RU)
PAVLODAR	PAVLODAR - ATIS (A3E)	EN 134.600 RU 133.600	Continuously	As AD	Pavlodar	Local reports, TREND(EN/ RU)
PETROPAVL OVS	PETROPAVLO VSK - ATIS (A3E)	EN 127.400 RU 118.300	HO	As AD	Petropavlovsk	Local reports, TREND(EN/ RU)
SEMEY	SEMEY - ATIS (A3E)	EN 118.500 RU 122.400	HO	As AD	Semey	Local reports, TREND(EN/ RU)
SHYMKENT	SHYMKENT - ATIS (A3E)	EN 119.200 RU 126.600	Continuously	H24	Shymkent	Local reports, TREND(EN/ RU)
TARAZ	TARAZ - ATIS (A3E)	EN 118.500 RU 127.400	Continuously	H24	Taraz	Local reports, TREND(EN/ RU)
TURKISTAN	TURKISTAN - ATIS (A3E)	EN 124.400 RU 118.300	Continuously	H24	Turkistan	Local reports, TREND(EN/ RU)
URALSK	URALSK - ATIS (A3E)	EN 124.800 RU 134.900	Continuously	As AD	Uralsk	Local reports, TREND(EN/ RU)
UST-KAMENOGO RSK	UST-KAMENOGOR SK - ATIS (A3E)	EN 124.200 RU 127.700	Continuously	As AD	Ust-Kamenogorsk	Local reports, TREND(EN/ RU)

Table 2: VOLMET service

Name of station	CALL SIGN Identification (EM)	Frequency MHZ	Broadcast period	Hours of service	Aerodromes/ Heliports included	REP, SIGMET INFO, FCST & Remarks
1	2	3	4	5	6	7
ZHEZKAZGAN	ZHEZKAZGAN - ATIS (A3E)	EN 131.400 RU 122.400	HO	As AD	Zhezkazgan	Local reports, TREND(EN/RU)

## 8. SIGMET and AIRMET SERVICE

Table 3: SIGMET service

Name of MWO/ location indicators	Hours of service	FIR or CTA served	Type of SIGMET/ validity	Specific procedures	ATS unit served	Additional information
1	2	3	4	5	6	7
AKTOBE/ UATT	H24	AKTOBE FIR	SIGMET/4 HR	SIGMET VA: VALIDITY 6 HR	AKTOBE ATC	Nil
ALMATY/ UAAA	H24	ALMATY FIR	SIGMET/4 HR	SIGMET VA: VALIDITY 6 HR	ALMATY ATC	Nil
ASTANA/ UACN	H24	ASTANA FIR	SIGMET/4 HR	SIGMET VA: VALIDITY 6 HR	ASTANA ATC	Nil
SHYMKENT/ UAII	H24	SHYMKENT FIR	SIGMET/4 HR	SIGMET VA: VALIDITY 6 HR	SHYMKENT ATC	Nil

### 8.1 General

For the safety of air traffic, the aerodrome meteorological office and meteorological watch maintain a continuous watch over meteorological conditions affecting flight operations within the lower and upper FIR and when necessary issues SIGMET and AIRMET information.

The meteorological service within aerodrome area is performed by the aerodrome meteorological offices (according to the table p.4 GEN 3.5) that issue AIRMET information for the flights below FL 100 (or below FL 150 in mountainous areas or below FL assigned by ATC).

Aerodrome meteorological office acting as a meteorological watch office issues and distributes SIGMET information.

### 8.2 Meteorological watch

Meteorological service in upper airspace of the Republic of Kazakhstan is carried out by meteorological watch offices performed in the following aerodrome meteorological offices: Astana, Almaty, Aktope and Shymkent. The MWOs includes the following aerodrome meteorological offices: Astana FIR - Kostanay, Kokshetau, Petropavlovsk, Karaganda, Pavlodar, Zhezkazgan; Almaty FIR: Semey, Ust-Kamenogorsk, Balkhash, Taldykorgan; Aktope FIR: Atyrau, Aktau, Uralsk; Shymkent FIR: Taraz, Kyzylorda, Turkistan.

SIGMET information is issued by a meteorological watch office and gives a concise description concerning the occurrence or expected occurrence of specified en-route weather that may affect the safety of aircraft operations, and of the development of those phenomena in time and space. The MWOs distribute SIGMET information within FIR or TMA to international databanks.

### 8.3 Aerodrome warnings

Aerodrome meteorological office issues aerodrome warnings concerning the occurrence and intensity of meteorological conditions and weather phenomena, which could adversely affect aircraft on the ground, including parked aircraft, and the aerodrome facilities and services.

Aerodrome warnings are issued due to the occurrence or expected occurrence of one or more of the following weather phenomena and conditions:

- thunderstorms;
- hail;
- heavy snow and / or snow showers;
- freezing precipitation (ice);
- freezing mist;
- frost or frost-mist;
- squall, tornado;
- sand or dust storm;
- rising sand and dust;
- winds with a speed of 15 m / s or more (including gusts), regardless of the direction;
- volcanic ash or volcanic ash deposits;
- toxic chemicals emissions;
- lowering of air temperature to minus 30 °C and lower, or its raising to plus 35 °C and higher;
- other phenomena consistent at the local level.

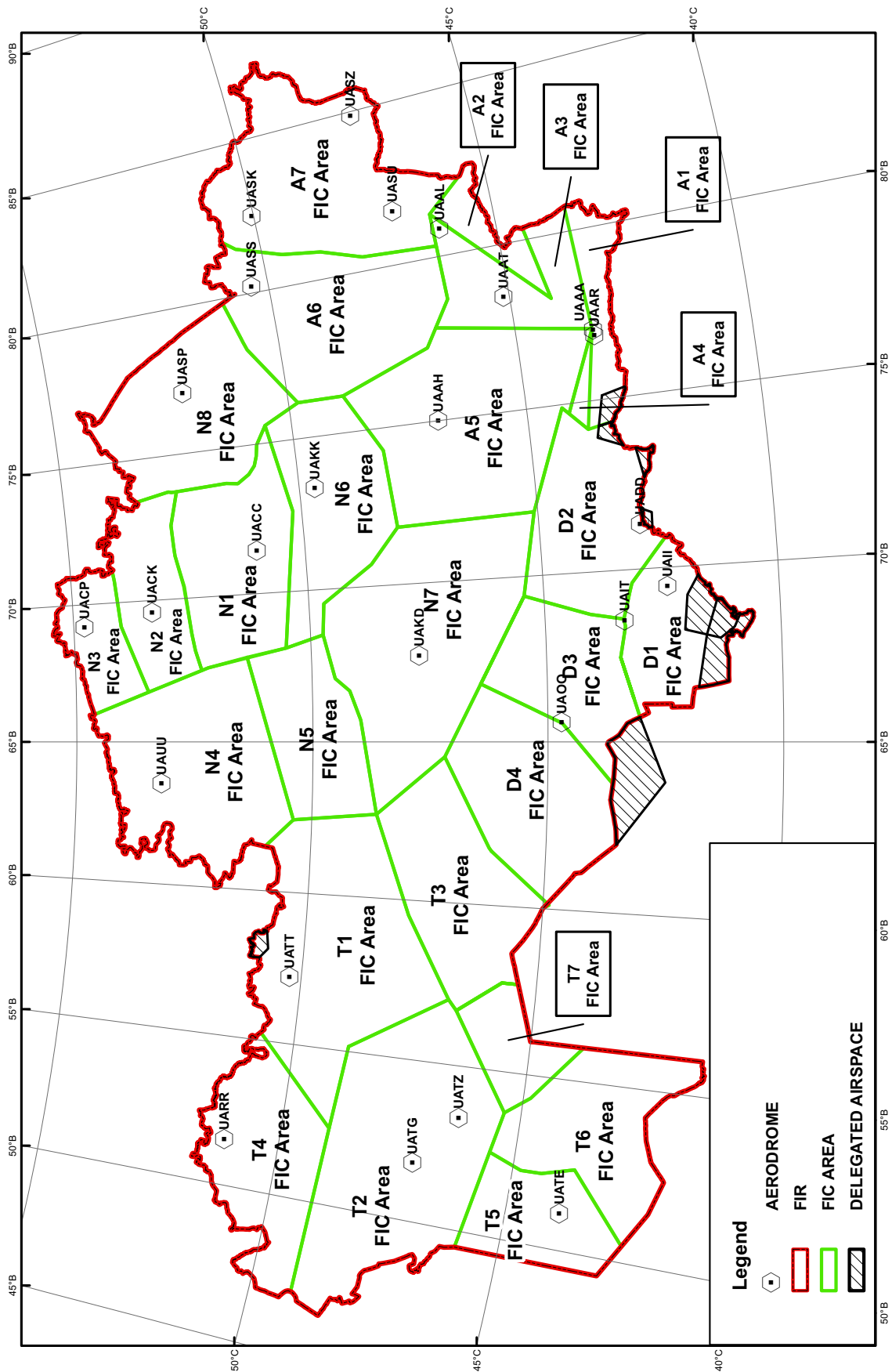
The aerodrome warnings are issued by aerodrome meteorological offices in English and / or Russian and are distributed in accordance with a distribution list agreed upon locally.

### 9. OTHER AUTOMATED METEOROLOGICAL SERVICES

Nil

### 10. GAMET/AIRMET AREAS

Forecast areas scheme of meteorological service for aircraft operations in the airspace  
of the Republic of Kazakhstan within FIC (Flight Information Center) areas



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