



LATVIAN AIS FUNCTIONAL SYSTEM CHANGES TO MEET AIM/SWIM NEEDS

Interregional EUR/MID PANS AIM Workshop
(Paris, France, 10-12 July 2018)

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MAIN TECHNICAL CHANGES

The latest amendments to Annex 15 and the new PANS-AIM document propose the following main technical changes:

Digital data sets. The full move into **an automated data-centric environment** requires the introduction of digital data sets. Providing the data in digital form represents a paradigm shift in the way information is handled along its life cycle.

This is an important step forward in the implementation of AIM under the all-embracing SWIM principles.

Aeronautical information product. The term aeronautical information product has been introduced to compile all the AIS deliverables to be provided in either digital data sets or as a standardized presentation in either paper or electronic form.

Data quality requirements. Whilst the industry standards (EUROCAE ED76A / RTCA DO200B) require seven characteristics of data quality (accuracy, resolution, integrity, timeliness, completeness, traceability and format), Annex 15 currently only includes three characteristics (accuracy, resolution and integrity).

The proposed amendment aims to solve this inconsistency by updating the data quality definition, adding four additional definitions of the data quality characteristics and updating the provisions to include the new quality characteristics.

AUTOMATED DATA-CENTRIC ENVIRONMENT

- The technical component of the amendment 40 to Annex 15 incorporates the AIM focus into Annex 15 which includes the scope, role and functions of AIM, the products and services within an AIM environment and the associated update mechanisms.
- The amendment generally encourages the transition from a product-centric AIS to the broader concept of a data-centric and service-oriented management of the aeronautical information.

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TABLE ASBU-EUR-B0-DATM 3-1

Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID)

- Requirement for the implementation and designation of the authoritative IAID

Notes: The IAID of a State is a single access point for one or more databases (AIS, Terrain, Obstacles, AMDB, etc.). The information related to the designation of the authoritative IAID should be published in the AIP (GEN 3.1)

- Requirement for an IAID driven eAIP production

Note — AIP production includes, production of AIP, AIP Amendments and AIP Supplements

- Requirement for an IAID driven NOTAM production
- Requirement for an IAID driven SNOWTAM production
- Requirement for an IAID driven PIB production
- Requirement for Charting systems to be interoperable with the IAID
- Requirement for Procedure design systems to be interoperable with the IAID

Note — full implementation includes the use of the IAID for the design of the procedures and for the storage of the encoded procedures in the IAID

- Requirement for ATS systems to be interoperable with the IAID

-arium

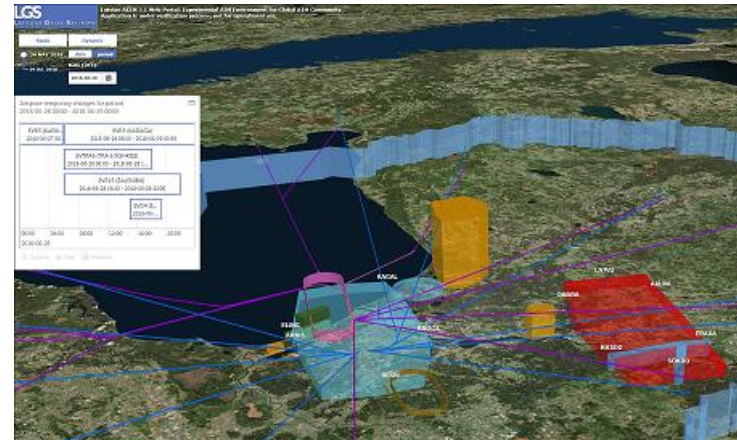
A place associated with a specified thing.

A device associated with a specified function.

AIM - arium



**AUTOMATED
DATA-CENTRIC
ENVIRONMENT**



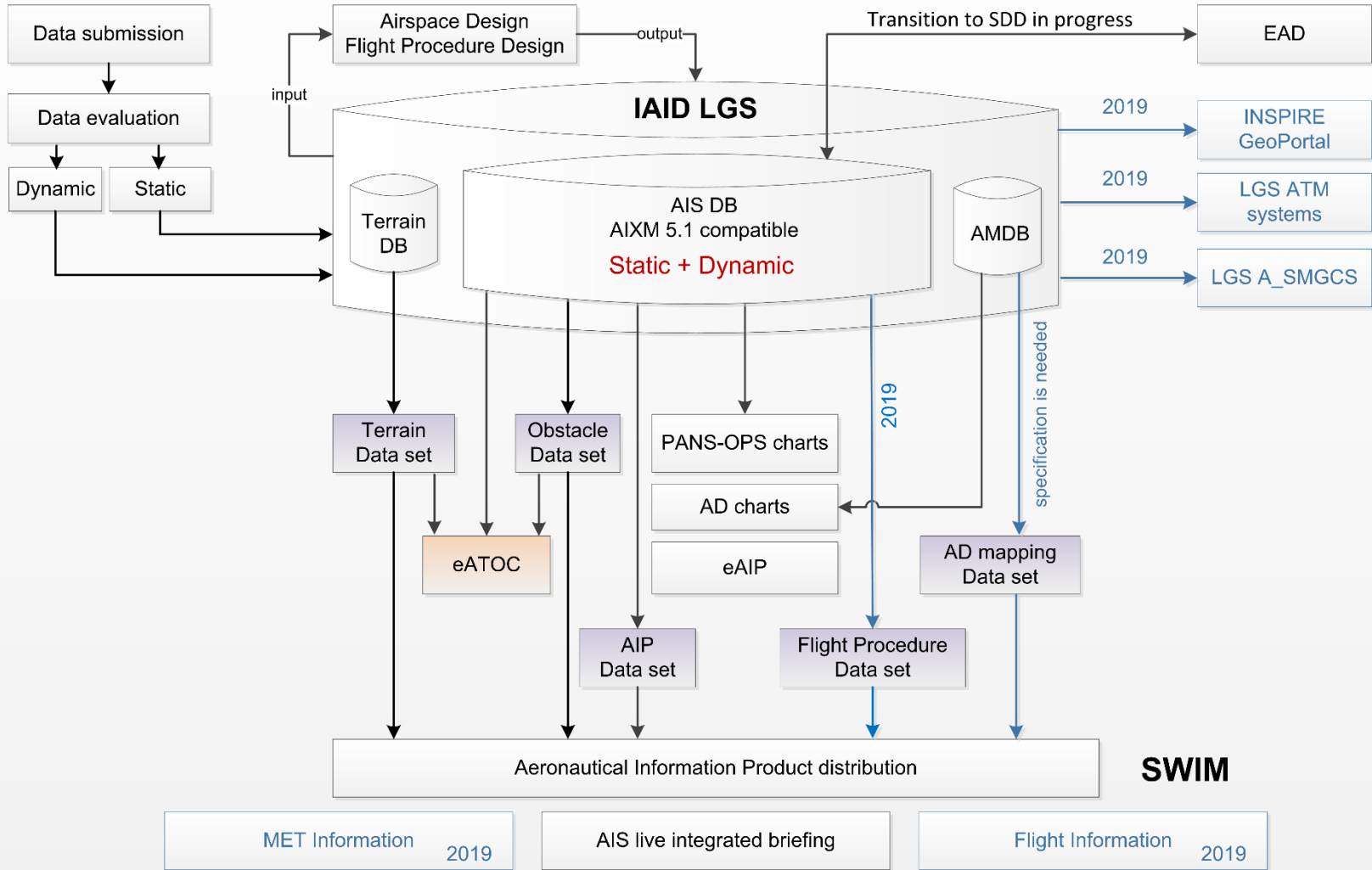
AIM-arium in a glance

AIM-arium has been developed to support the transition from AIS to AIM environments and to enable the digital exchange of aeronautical data and information on a worldwide basis;

- *AIM-arium* is the automated data-centric environment oriented for the introduction of digital data sets;
- *AIM-arium* represents the data in digital form and handles it along its life cycle;
- *AIM-arium* realize the dynamic and integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties;
- *AIM-arium* makes available more performance oriented digital aeronautical data provision for all interested parties;
- *AIM-arium* uses data presented in globally approved AIXM 5.1 format and GIS technologies to facilitate digital data portrayal.

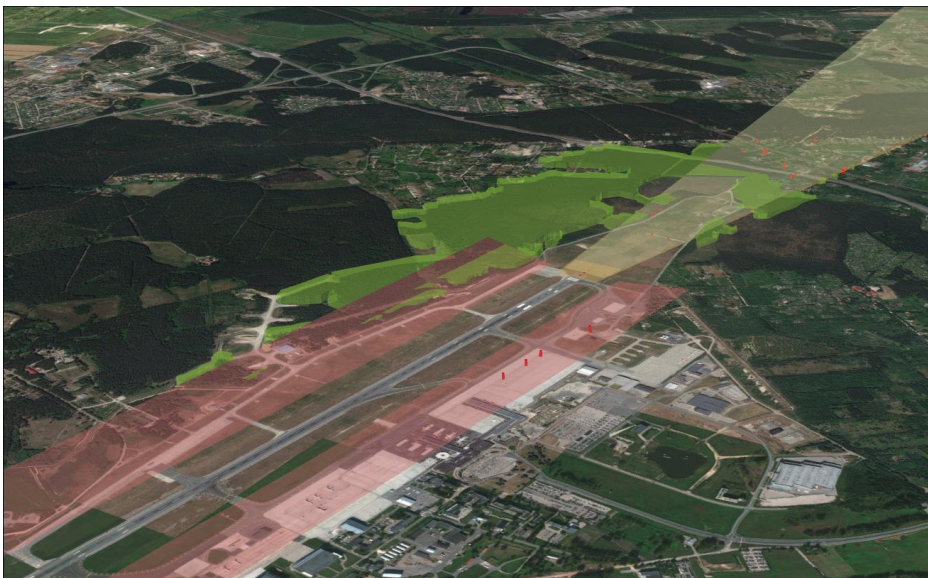
AIM-arium is a logical and important step forward in the implementation of AIM under the all-embracing SWIM principles.

LATVIAN AIS/AIM FUNCTIONAL SYSTEM



Interregional EUR/MID PANS AIM Workshop, (Paris, France, 10-12 July 2018)

DATA-CENTRIC ENVIRONMENT FOR eTOD PROVISION



Area 1	Area 2	Area 3	Area 4
Riga	Liepaja		<input type="checkbox"/> File exchange without JAVA
Effective date: 29-Mar-2018	AD RIGA (EVRA) - penetrations of the aerodrome obstacle limitation surfaces. (WEF:29-MAR-2018)	According to ICAO Annex 15 document, from 12 November 2015, at aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for penetrations of the aerodrome obstacle limitation surfaces.	
		EVRA_CONICAL.xml (CRC32Q value: 0E753F1D) EVRA_INNER_HORIZONTAL.xml (CRC32Q value: 03FE26D4) EVRA_RWY18_APPROACH.xml (CRC32Q value: FBD95B11) EVRA_RWY18_BALKED_LANDING.xml (CRC32Q value: 08A98614) EVRA_RWY18_INNER_APPROACH.xml (CRC32Q value: 919DC33A) EVRA_RWY18_INNER_TRANSITIONAL.xml (CRC32Q value: E3F9A435) EVRA_RWY18_TAKE_OFF_CLIMB.xml (CRC32Q value: 904989A6) EVRA_RWY18_TRANSITIONAL.xml (CRC32Q value: 4D34817C) EVRA_RWY36_APPROACH.xml (CRC32Q value: C6AAF3FD) EVRA_RWY36_BALKED_LANDING.xml (CRC32Q value: 2B86671A) EVRA_RWY36_INNER_APPROACH.xml (CRC32Q value: B1CC66E0)	

Aeronautical Information Service Welcome, Origination ANID INFO TOOLS LOG OUT ? Q LV EN

Obstacle data sets

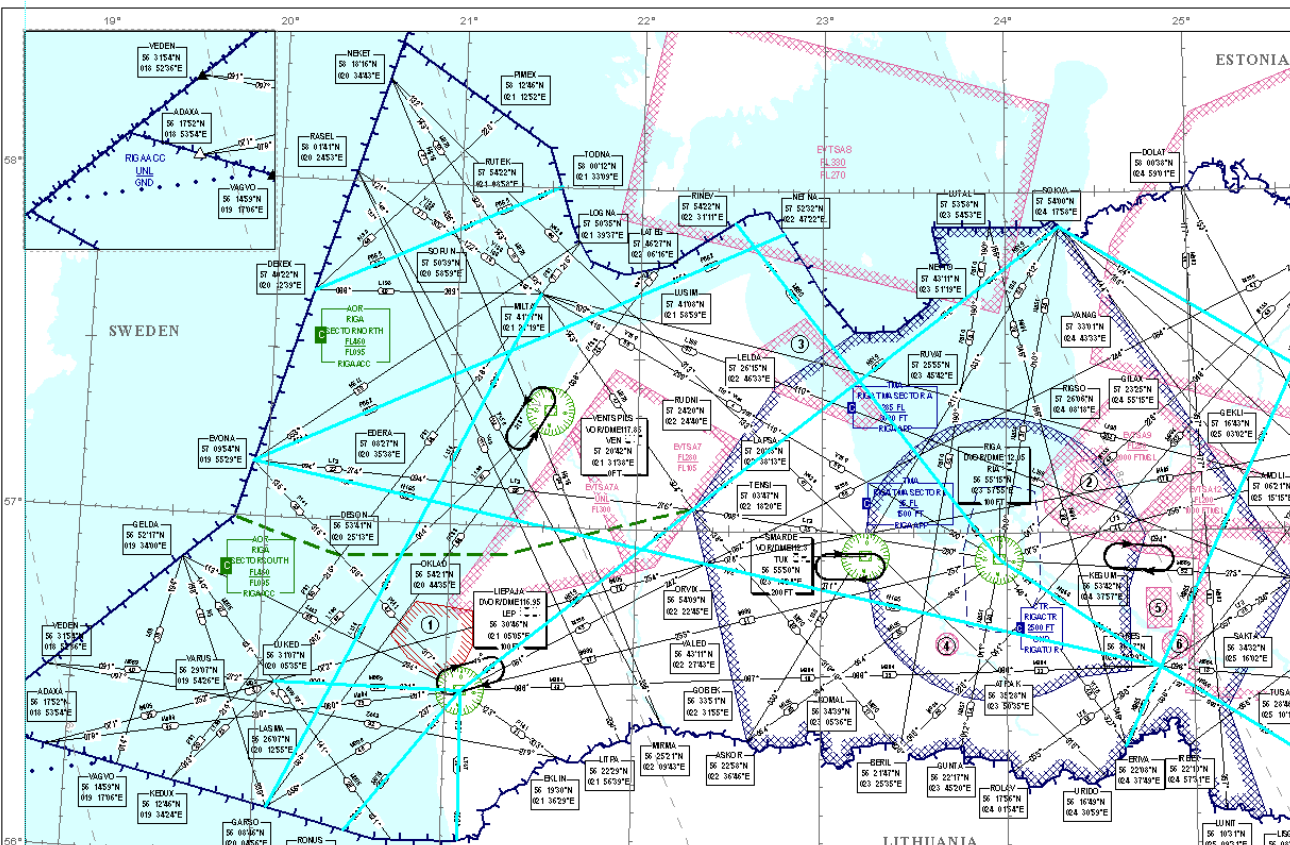
Area 1	Area 2	Area 3	Area 4
			<input type="checkbox"/> File exchange without JAVA
Effective date: 24-May-2018	ELECTRONIC OBSTACLE DATA AREA 1 (WEF: 24 MAY 2018)	Effective date: 24 MAY 2018 Automated direct electronic distribution of electronic obstacle data is performed through the use of a direct electronic connection between the Latvian AIS and you (the LGS AIS intended user). Electronic obstacle datasets is provided using AIXM 5.1 format for the Area 1.	
		Latvia_AREA1_eObstacles_2018-05-24_AIXM5.1.xml (CRC32Q value: B49AE953)	

Area 1	Area 2	Area 3	Area 4
Riga	Liepaja		<input type="checkbox"/> File exchange without JAVA
Effective date: 05-Mar-2015	ELECTRONIC OBSTACLE DATA EVRA AREA 4 (WEF: 05 MAR 2015)	Effective date: 05 MAR 2015 Automated direct electronic distribution of electronic obstacle data is performed through the use of a direct electronic connection between the Latvian AIS and you (the LGS AIS intended user). Electronic obstacle datasets and terrain are provided using AIXM 5.1 and GeoTIFF formats for the following: - Area 4 for Riga Aerodrome (EVRA).	
		EVRA_Area_4_eObstacle_2015-03-05_AIXM5.1.xml (CRC32Q value: D67DC48D)	

DATA-CENTRIC ENVIRONMENT FOR QUALITY ASSURANCE

AIP LATVIA

ENROUTE CHART - ICAO
(FL095 - FL460)



OBJECTID *	SHAPE *	FeatureGUID
1	Polyline ZM	d25e03eb-2967-4f6e-b46e-54316ab66499
2	Polyline ZM	6598d559-6122-4c02-ad6a-738d5da0d93f
3	Polyline ZM	33fca8a5-2630-4ebf-bbe6-f13489a6bfa0
4	Polyline ZM	847946ba-6721-46b5-b9a6-83dbb7f0f1a8
5	Polyline ZM	87bbac31-143a-4ebb-a977-b2c31a2f1815
6	Polyline ZM	2ae9fb0c-fb85-4111-9409-05934e868412
7	Polyline ZM	7518d863-52a6-402c-9b59-34432b213bf1
8	Polyline ZM	1f1b48cc-02a4-4f8d-93d5-89b664036293
9	Polyline ZM	11c599bf-f2fe-4e18-b71e-5c1947a439a0
10	Polyline ZM	72c0898d-3094-4795-a33c-049427b13201
11	Polyline ZM	599584cc-dfa7-4387-a8cc-8b5154317e0d
12	Polyline ZM	9daf172a-a9d0-4222-ab95-95d2806a2e28
13	Polyline ZM	edb3d575-c1c7-48ff-bb8c-06d391193ef2
14	Polyline ZM	c61cerca-1f71-47d6-a195-335e735ae7cc
15	Polyline ZM	18abef80-8a17-4c71-8450-04955eedad83
16	Polyline ZM	34d86624-21bf-465c-98e7-2c1967cb44fa
17	Polyline ZM	3966e27e-560a-45eb-8d93-0e970e9f0d43
18	Polyline ZM	d5ae6355-f85d-4f66-8cb7-7d1953da339e
19	Polyline ZM	24806684-2ec4-475a-b4db-8b4f62a9694f
20	Polyline ZM	a71a9dee-8952-4959-9c9c-371026213bd7
21	Polyline ZM	058b7241-250f-4ee8-aca2-5f1f1bb93470
22	Polyline ZM	0fc8e2d2-8d81-49a3-9dfe-2b3dc809811f
23	Polyline ZM	b83a904c-5622-4080-89ec-c479604440d8
24	Polyline ZM	0cd5b920-1e52-49ef-ac23-4a3877578699
25	Polyline ZM	4181bbf7-280f-44b0-93f3-107cd45f1ad5
26	Polyline ZM	7781bb7c-14ab-4d97-9a9f-fc87f0d41171
27	Polyline ZM	a6c090f0-ee44-4e07-982b-297c38bf1174
28	Polyline ZM	af2b8d1c-3660-4ae5f1-8c85-b813b0cctf50
29	Polyline ZM	d739c113-c8c9-4f6e-8be4-cf7c041d658e
30	Polyline ZM	af97ed3c-357a-4623-9f1c-7344f15a0e6f
31	Polyline ZM	2b27ebdb-c362-4935-b5d8-fc4711e0b9d9
32	Polyline ZM	58174b75-221f-45af-b864-45f09aeb9f06
33	Polyline ZM	8126dcb8-3557-4002-93f3-fbd938af7e55
34	Polyline ZM	ecc446bb-ebc8-44c3-823a-884ba6df5733
35	Polyline ZM	ete817b9-d252-4407-90c2-2aa67cfa4c8e
36	Polyline ZM	05c5642d-29b1-440a-82a5-84986e94f556
37	Polyline ZM	71943784-f9ec-4348-9e37-7d54f81f9d52
38	Polyline ZM	e8962cc8-9fed-447e-a2e7-4f98039c0e38
39	Polyline ZM	1b1f0c4b-dcd3-4a83-83e7-314ab02b63d7
40	Polyline ZM	11c759d1-c54d-4183-ae36-52dd0f2d5948
41	Polyline ZM	49709004-7687-4219-a936-b21be59b7336
42	Polyline ZM	82471b0e-42ac-47bd-8d5d-098670d8aff
43	Polyline ZM	23c8148b-56ab-48dc-8bd6-565d0382b963
44	Polyline ZM	56f8104a-08a3-41e9-a5d6-d7bb6b9da6a4

Route segment traceability using UUID

OBJECTID *	SHAPE *	FeatureGUID	designator	RouteFor	codeDir	codeLvl	valDistVerUpper	uomDistVerUpper	StartWayPointDesignator	EndWayPointDesignator	valReversTrueTrack	ActualDate	val_en	codeIntl	codeDis
1	Polyline ZM	d25e03eb-2967-4f6e-b46e-54316ab66499	DEREX: RUTEK	P863	BACKWAR	BOTH	460	FL	DEREX	RUTEK	245.4	23.06.2016 03:00:00	33.23	OTHER	OTHER
2	Polyline ZM	6598d559-6122-4c02-ad6a-738d5da0d93f	RUTEK: TODNA	P863	BACKWAR	BOTH	460	FL	RUTEK	TODNA	245.7	29.03.2018 03:00:00	14.14	OTHER	OTHER



**STATE
DATA-CENTRIC ENVIRONMENT
FOR AISP - INDUSTRY COLLABORATION**



SID CHART' PROCEDURES

AIP LATVIA
EVRA AD 2.24.7-7
19 JUL 2018
SID – ICAO CHART

LGS IAIM DB designators and UUID:
AMOLI 2G
b518aa5e-ecaf-40c2-a372-25c63e484221

ERIVA 5G
ab84fb21-536b-44e7-9f80-6e96d998f62d

SAKTA 5G
6df31c3a-6553-4708-bae8-1e230aed3518

SOKVA 6G
f2b5ce1c-1ca3-4e37-a74e-cfc1e5043d5f

TUSAS 6G
93733476-7639-431b-92fc-7460ed2fb119

VANAG 6G
81ebbd85-e2cb-48ef-8bde-8b9c8237e4bc

Procedure developer: LGS FPD unit.
Chart producer: LGS AIS.

Contacts
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Muzeju street 3, "Riga" Airport, Marupe region, LV-1053, Latvia.
AIS Phone: +371 67 300664
Fax: +371 67 300660
E-mail: ais@lgs.lv

POSSIBLE TRACEABILITY BRIDGE



STAR CHART' PROCEDURES

AIP LATVIA
EVRA AD 2.24.9-7
19 JUL 2018
STAR – ICAO CHART

LGS IAIM DB designators and UUID:
AMOLI 2C
4e1f6709-d11a-40ed-8584-4770d16ef3f0

BARVA 6C
7d6cd0e4-bc4b-44be-b21c-1ee6cba60a79

ERIVA 3C
dcbbd3d7-46e1-436c-9e35-65450899538a

LUTAL 5C
f2b5ce1c-1ca3-4e37-a74e-cfc1e5043d5f

SOKVA 7C
527d7e04-e074-418e-975b-c127db80288f

TUSAS 6C
bcdabd2e-abe6-493d-b084-742b16c7967d

VANAG 6C
ba43c87d-1d31-4a9d-a229-dfbdcba0f686

Procedure developer: LGS FPD unit.
Chart producer: LGS AIS.

Contacts
SJSC "Latvijas gaisa satiksme"
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Muzeju street 3, "Riga" Airport, Marupe region, LV-1053, Latvia.
AIS Phone: +371 67 300664
Fax: +371 67 300660
E-mail: ais@lgs.lv

STAR PROCEDURES UID TRACEABILITY

AIP LATVIA

EVRA AD 2.24.9 - 7
19 JUL 2018

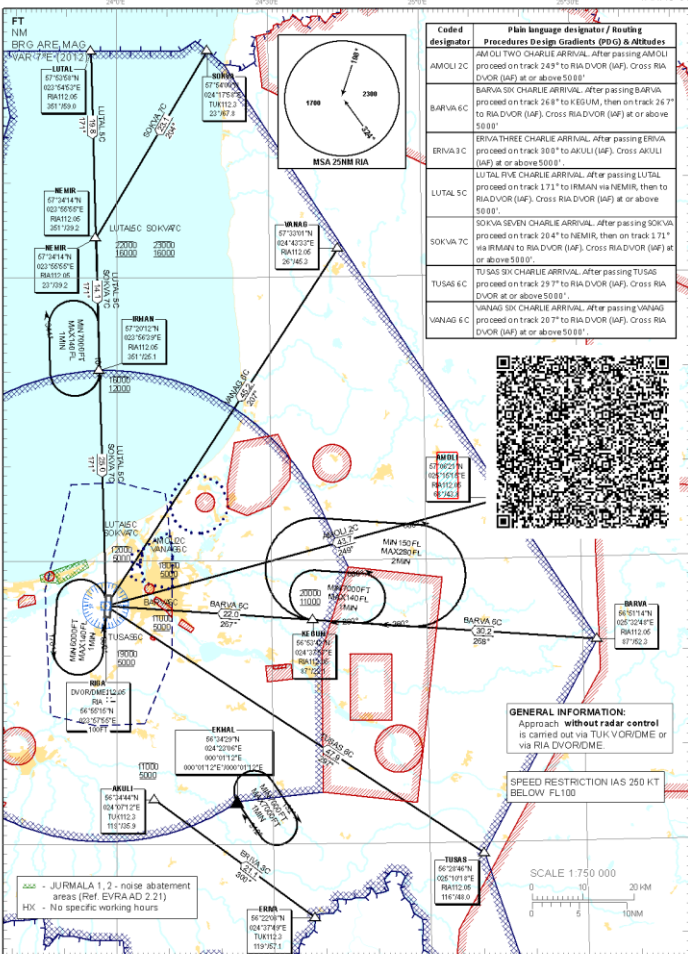
STANDARD ARRIVAL CHART -
INSTRUMENT (STAR) - ICAO

TRANSITION ALTITUDE
6000 FT

RIGA APPROACH 129.926
RIGA APPROACH 134.85
TWR 118.10

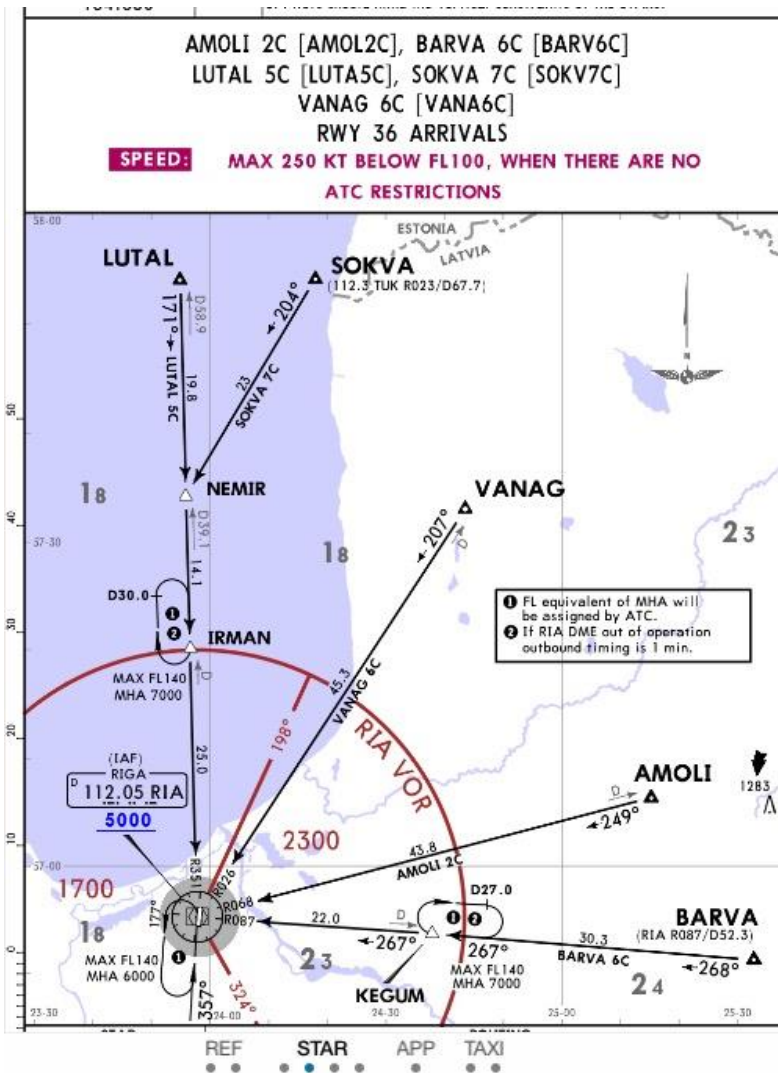
RIGA (EVRA)

AMOLI 2C [BARVA 6C / ERVA 3C /
LUTAL 5C / SOKVA 7C / TUSAS 6C /
VANAG 6C
RWY 36



AIS Latvijas Gaisa Satiksme

08/18



SID PROCEDURES UUID TRACEABILITY

AIP LATVIA

STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO

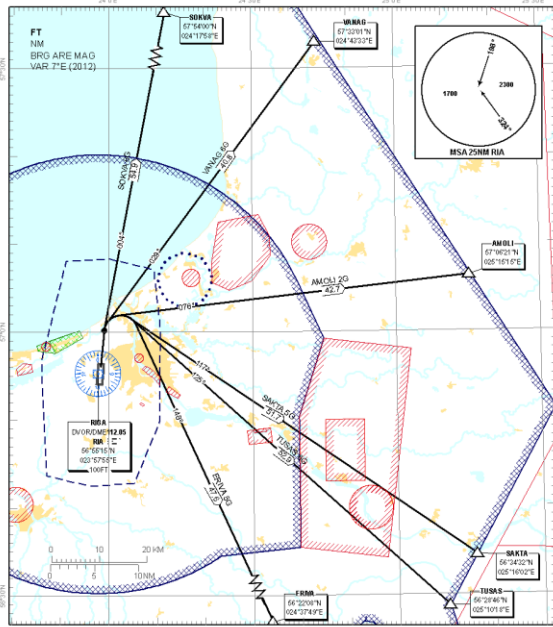
TRANSITION ALTITUDE
6000 FT

RIGA APPROACH 129.825
RIGA APPROACH 134.85
TWR 118.10
RIGA CONTROL 133.20

EVRA AD 2.24.7 - 7
19 JUL 2018

RIGA (EVRA)
RWY 36

AMOLI 2G /JERIVA 5G /SAKTA 5G /
SOKVA 6G /TUSAS 6G /VANAG 6G



Code/ designator	Main language designator / Routing procedures Design Gradients (PDG) & Altitudes
AMOLI 2G	AMOLI 2G: Climb straight ahead on TR 350°. Not before 5.0 DME RIA, at or above 3500 FT turn right (MMN turn radius 1.8 NM). Establish TR 140°. Proceed to AMOLI. Procedure Design Gradient (PDG) 7.0% to 4000 FT to avoid unnecessary noise disturbance. PDG 3.3% to be clear of obstacles.
ERVA 5G	ERVA 5G: Climb straight ahead on TR 350°. Not before 5.0 DME RIA, at or above 3500 FT turn right (MMN turn radius 1.8 NM). Establish TR 140°. Proceed to ERVA. Procedure Design Gradient (PDG) 7.0% to 4000 FT to avoid unnecessary noise disturbance. PDG 3.3% to be clear of obstacles.
SAKTA 5G	SAKTA 5G: Climb straight ahead on TR 350°. Not before 5.0 DME RIA, at or above 3500 FT turn right (MMN turn radius 1.8 NM). Establish TR 117°. Proceed to SAKTA. Procedure Design Gradient (PDG) 7.0% to 4000 FT to avoid unnecessary noise disturbance. PDG 3.3% to be clear of obstacles.
SOKVA 6G	SOKVA 6G: Climb straight ahead on TR 350°. Not before 5.0 DME RIA, at or above 3500 FT turn right (MMN turn radius 1.8 NM). Establish TR 004°. Proceed to SOKVA. Procedure Design Gradient (PDG) 5.0% to 4000 FT to avoid unnecessary noise disturbance. PDG 3.3% to be clear of obstacles.
TUSAS 6G	TUSAS 6G: Climb straight ahead on TR 350°. Not before 5.0 DME RIA, at or above 3500 FT turn right (MMN turn radius 1.8 NM). Establish TR 120°. Proceed to TUSAS. Procedure Design Gradient (PDG) 7.0% to 4000 FT to avoid unnecessary noise disturbance. PDG 3.3% to be clear of obstacles.
VANAG 6G	VANAG 6G: Climb straight ahead on TR 350°. Not before 5.0 DME RIA, at or above 3500 FT turn right (MMN turn radius 1.8 NM). Establish TR 020°. Proceed to VANAG. Procedure Design Gradient (PDG) 5.0% to 4000 FT to avoid unnecessary noise disturbance. PDG 3.3% to be clear of obstacles.

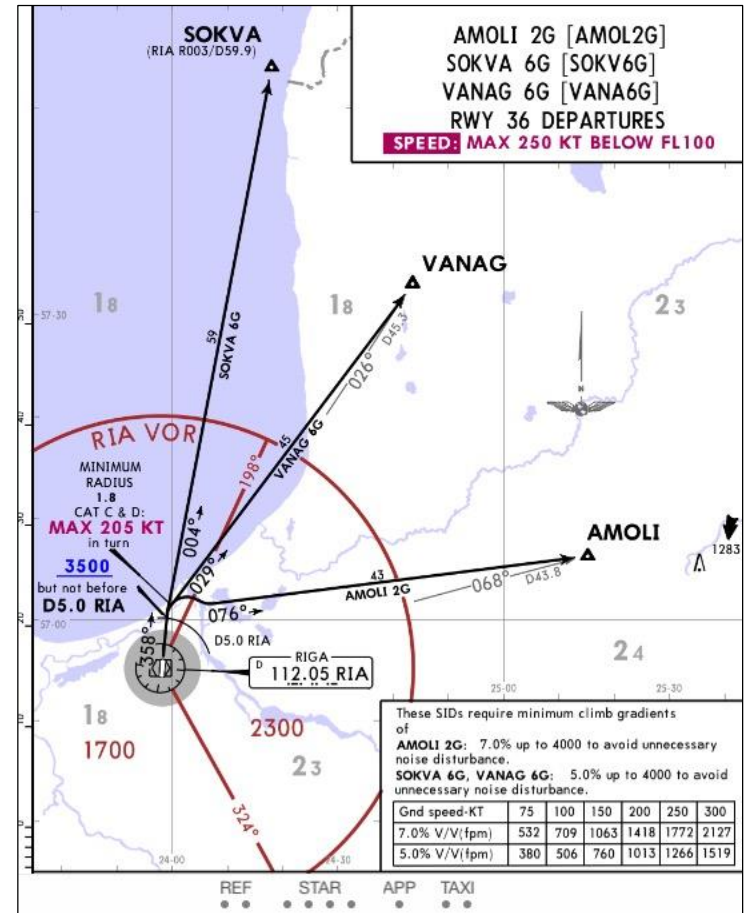


For detailed description of the conditions and flight procedures refer to AIP EVRA AD 2.22.

- NOTE:**
1. Departure turn limited to 205 kt (ACFT CAT C, D) IAS maximum;
 2. Initial climb clearance 4000 FT unless otherwise is instructed by TWR;
 3. Contact APP not later than passing 1500 ft after take-off;
 4. Contact APP on 129.825 MHz unless other frequency assigned by TWR;
 5. MAX IAS 250 kt below FL 100;
 6. All SIDs - Radar surveilled;
 7. If unable to comply SID contact ATC.

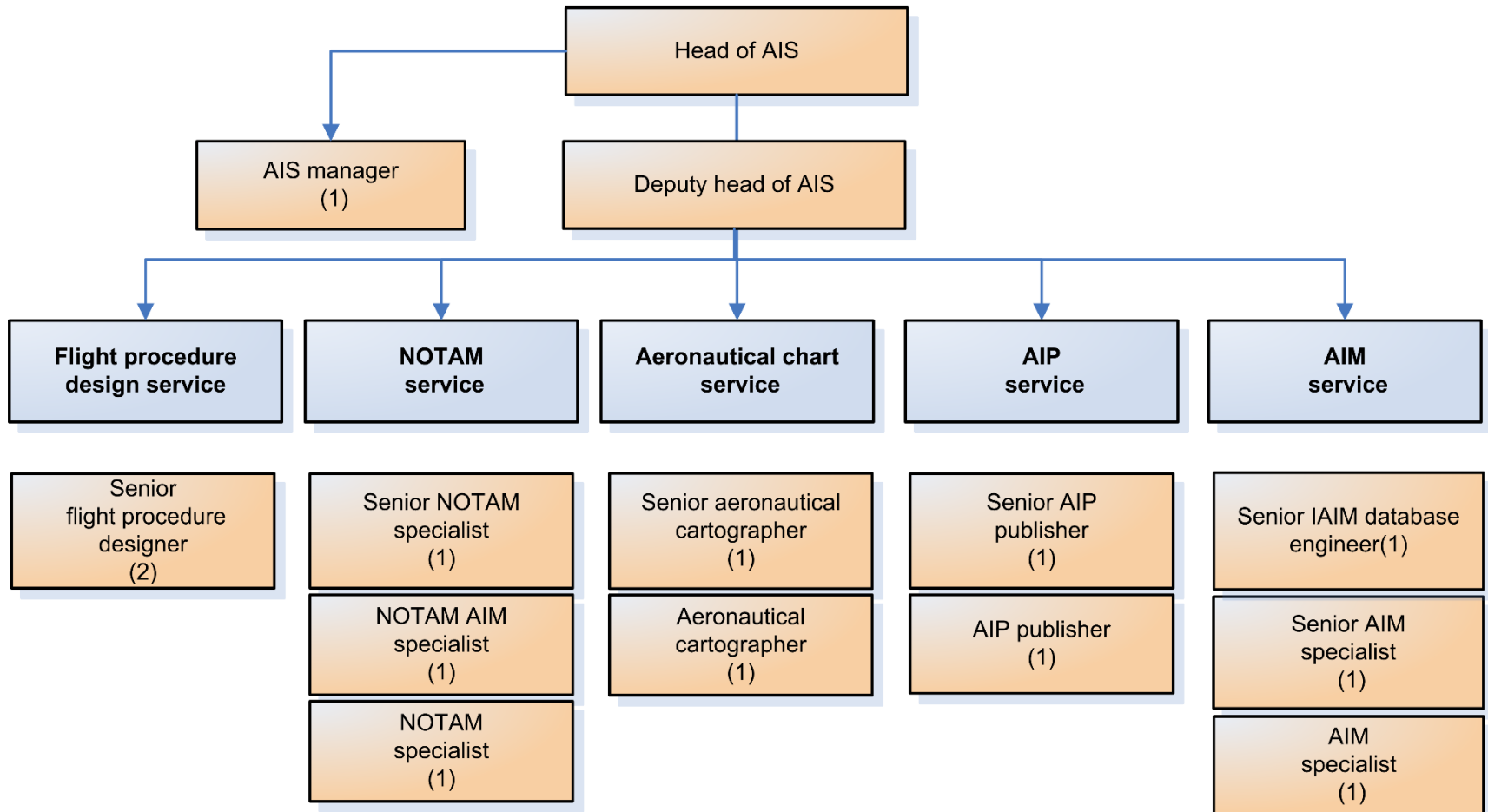
AIS Latvijas Gaisa Satiksme

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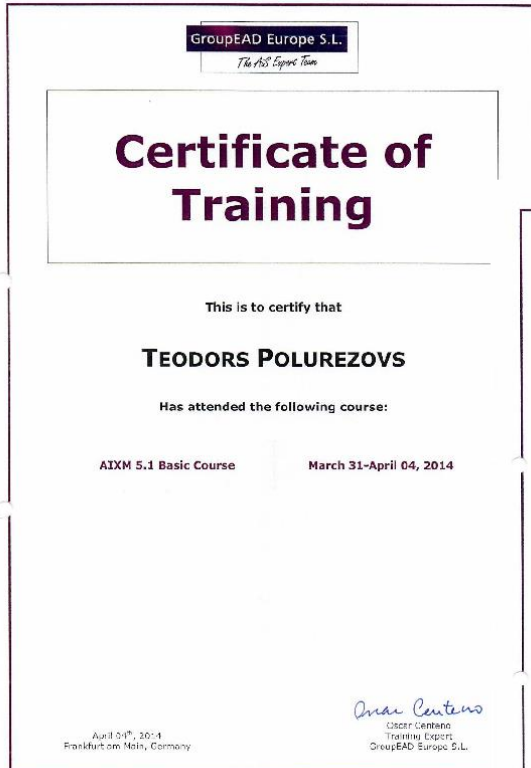


HUMAN RESOURCES INVOLVED

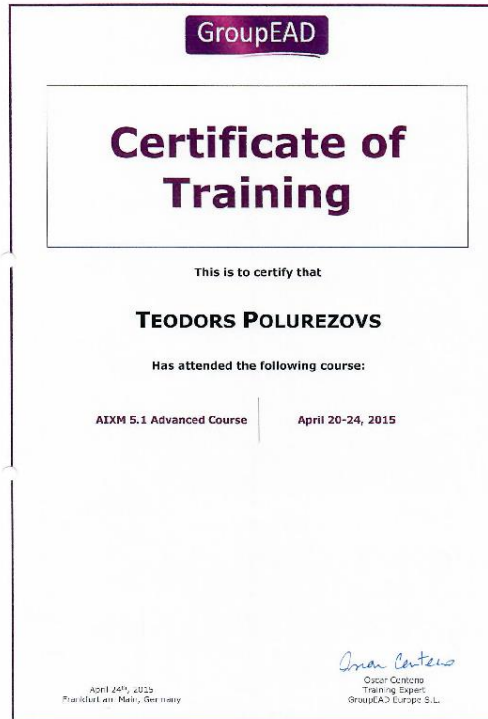
AIS staff structure



ADVANCED COMPETENCE ASSURANCE



AIXM 5.1



No	Name, Surname	Position	AIXM 5.1 Basic	AIXM 5.1 Advanced
1	Teodors Polurezovs	Senior IAIM Database Engineer	(31.03.-04.04).14	(20-24).04.15
2	Sergejs Sņegovs	Senior AIM Specialist	(31.03.-04.04).14	(20-24).04.15
3	Mārtiņš Plūme	Senior Flight Procedure Designer	(29.09.-03.10).14	(20-24).04.15
4	Gvido Pētersons	Senior Aeronautical Cartographer	(29.09.-03.10).14	(18-22).04.16
5	Irina Kuzmina	Senior AIP Specialist	(21-25).09.15	2019
6	Pēteris Vasiljevs	Senior Flight Procedure Designer	(05-09).12.16	2019
7	Svetlana Vorožcova	Senior NOTAM Specialist	(05-09).12.16	2019
8	Vadims Tumarkins	Head of AIS	(05-09).12.16	2019
9	Jana Jaskeviča	AIP Specialist	(05-09).12.16	2019
10	Didzis Dobelis	AIM Specialist	(10-14).09.18	
11	Kaspars Šmaukstelis	Aeronautical Cartographer		
12	Dmitrijs Gļinkins	NOTAM AIM Specialist		

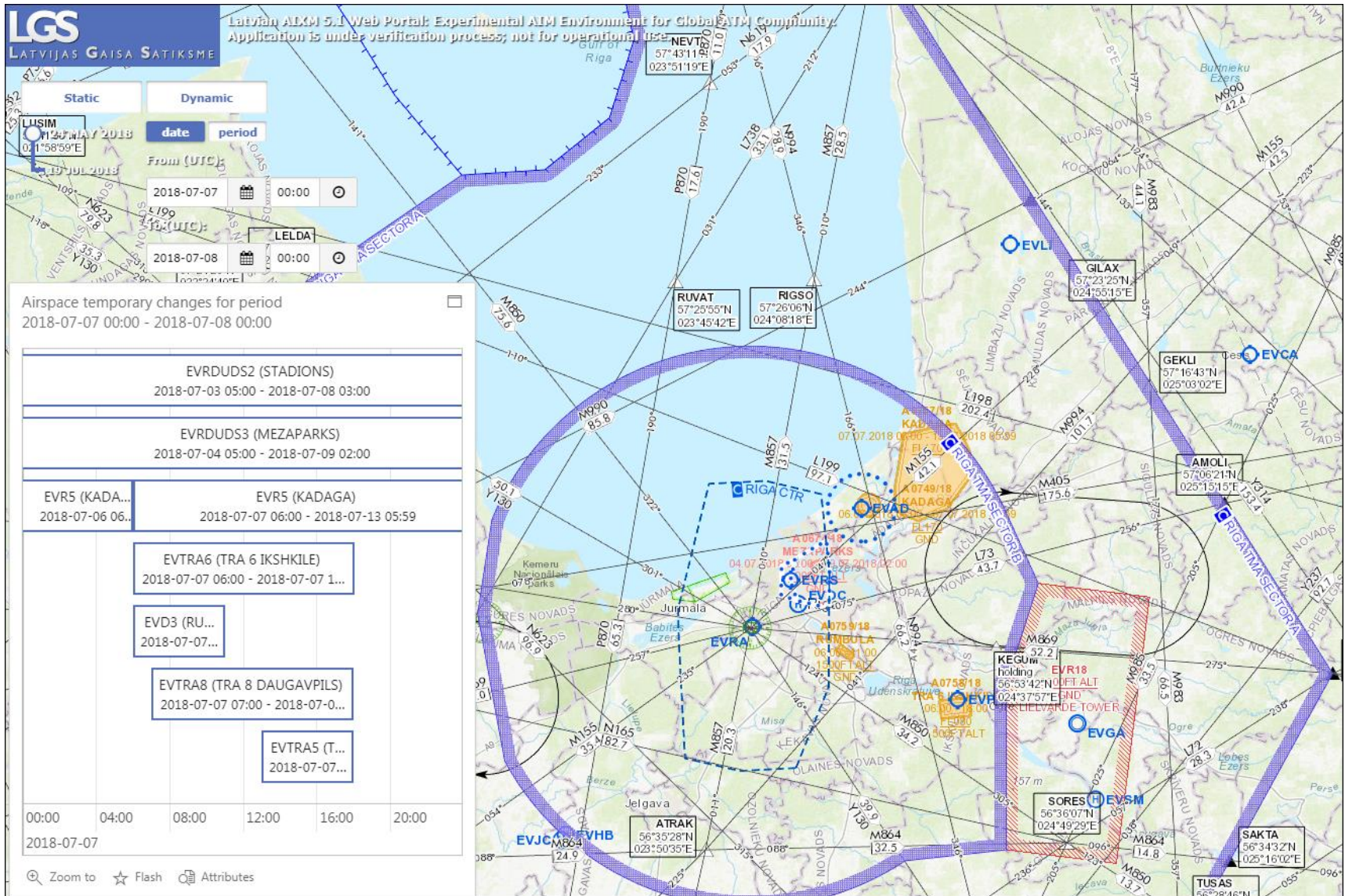


AIM SOLUTIONS FOR ATM NEEDS

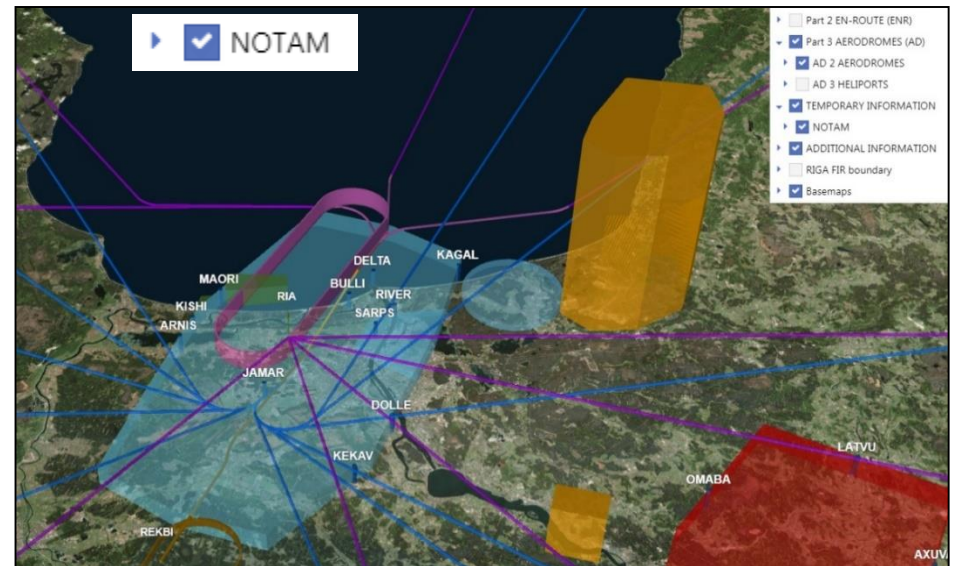
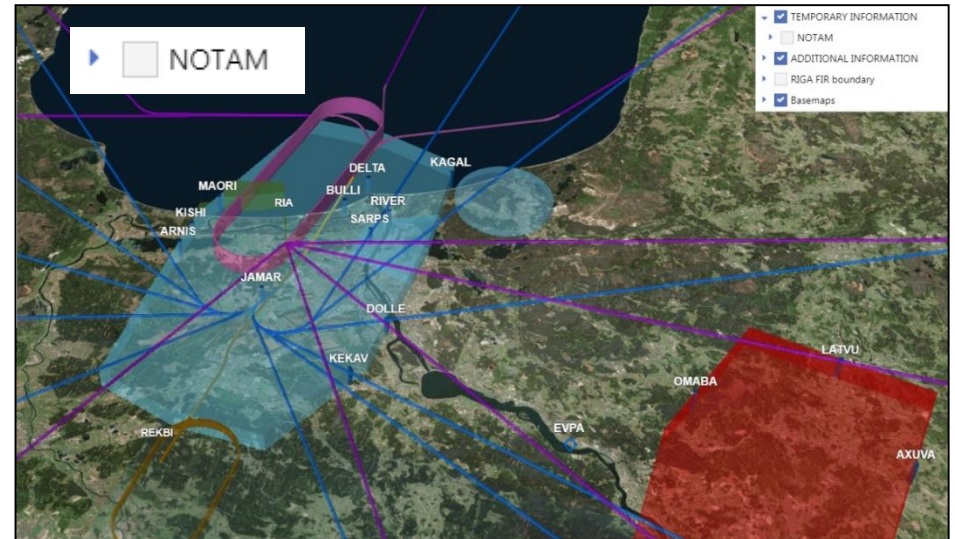
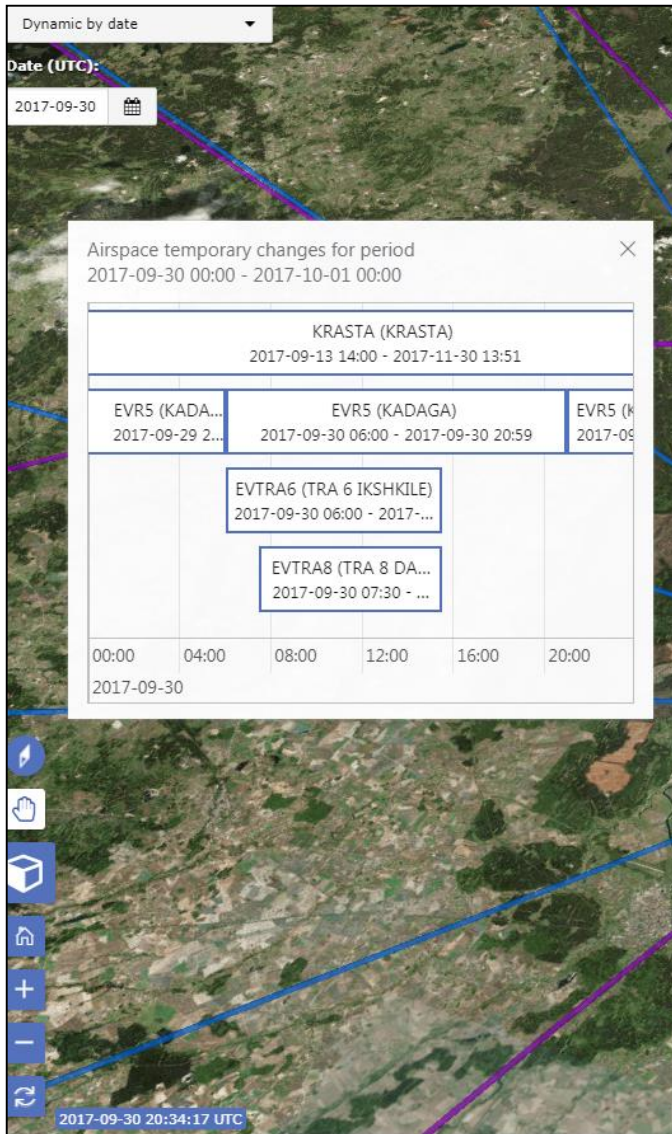
Prior to taking over an operating position, a controller should:

- a) ensure that he has a full **understanding of the air traffic situation** including an awareness of clearances issued but not yet acted upon and any developing situation requiring early attention;
- b) familiarize himself with **the serviceability of all equipment** under his charge and liable to be used during his tour of duty (e.g. radar, radio, approach aids, telephone lines and aerodrome lighting);
- c) obtain all relevant information and familiarize himself with the **meteorological situation** and trends for his tour of duty and where practicable get a personal briefing from a meteorological office;
- d) ensure he is fully conversant with **the latest** promulgated orders, instructions, **notices and information**, particularly with reference to the serviceability of aerodromes and other air navigation facilities.

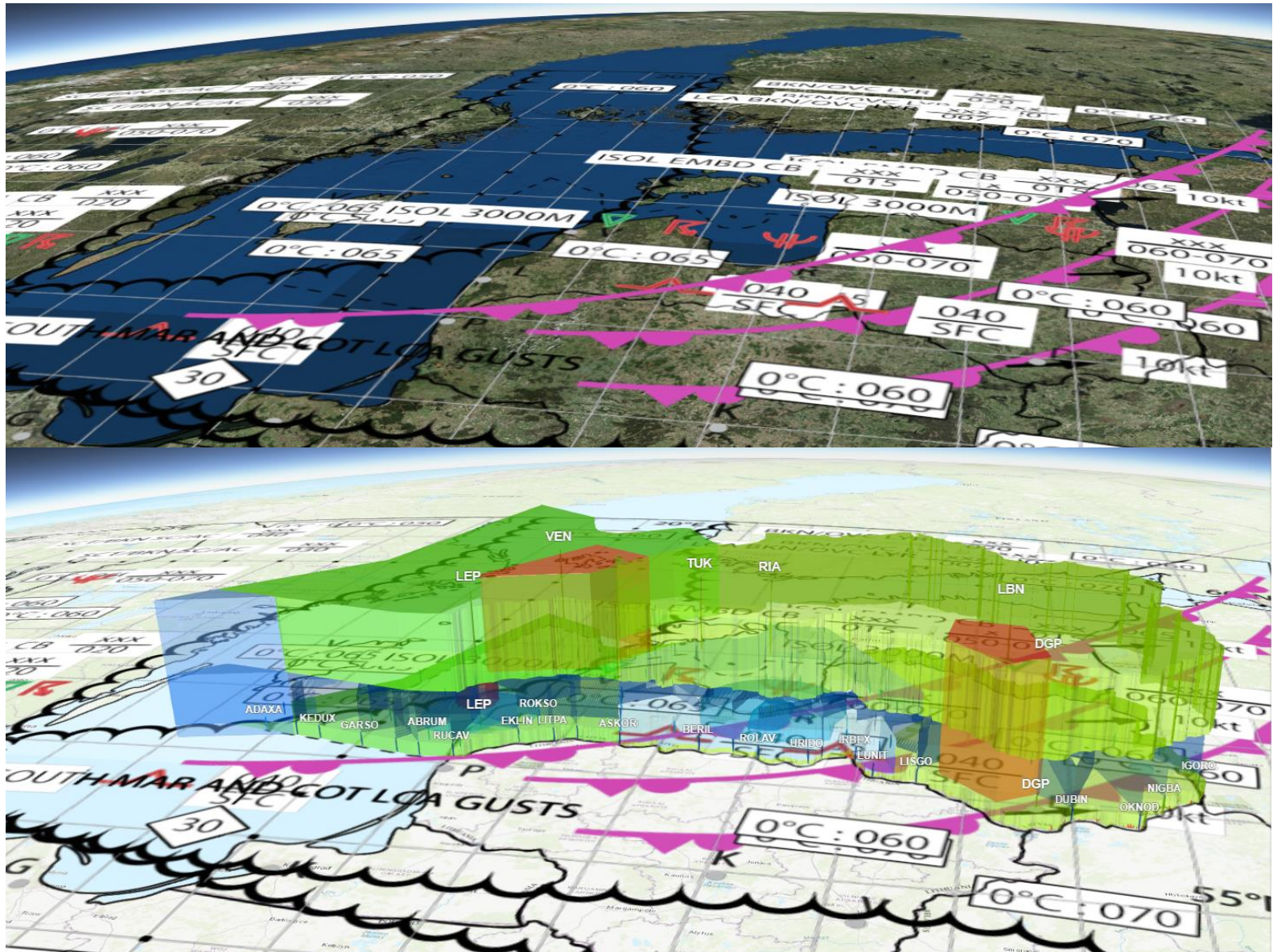
DATA-CENTRIC ENVIRONMENT FOR INFORMATION ACTUALITY



DATA-CENTRIC ENVIRONMENT FOR INFORMATION UNDERSTANDING



DATA-CENTRIC ENVIRONMENT FOR INFORMATION MERGING





MANY THANKS FOR YOUR ATTENTION

Questions, please

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