



Federal State Unitary Enterprise
«State ATM Corporation»

Branch of «North East Air Navigation»



AIDC Interaction between Magadan ACC
and Anchorage ARTCC





AIDC

Historical Background, Current State of Things

According to the intentions announced by FSUE “State ATM Corporation” at CPWG/13 meeting, the branch “North East Air Navigation” has arranged work on the voiceless interaction between Magadan ACC and Anchorage ARTCC on AIDC protocol:

- The equipment project developed in 2017;
- The hardware facilities for AIDC messaging delivered, installed, adjusted and started up;
- The automated ATC “Alpha” System software updated;
- The software and equipment bed tests run locally;
- The local tests of the Automated Alpha System carried out at ATC working places in online mode.



Equipment Project

AIDC Server



УТВЕРЖДАЮ

Директор ФГУП
«Аэронавигация Северо-Востока»
ФГУП «Госкорпорация по ОрВД»
Ю.А. Самойлов
« 05 » мая 2017 г.

ПРОЕКТ ОСНАЩЕНИЯ
дополнительным оборудованием
для организации безречевого взаимодействия
по протоколу AIDC с РДЦ Анкоридж
Магаданского УЦ ЕС ОрВД

Заместитель директора
по разработкам
ООО «Фирма «НИТА»
Ю.А. Дурманенко
« 05 » мая 2017 г.

Санкт-Петербург
2017



AIDC

Historical Background, Current State of Things

- The Memorandum of Understanding for operational testing between Magadan ACC and Anchorage ARTCC signed.
- The operational testing has been conducted in accordance with the MOU since July 26, 2018.
- The draft LOA between Magadan ACC and Anchorage ARTCC providing for the coordination procedures on AIDC protocol is prepared and agreed upon.
- The voiceless AIDC interaction between Magadan ACC and Anchorage ARTCC is planned to be put into the regular operation mode on June 30, 2022
- The message exchange results for the period of March 01, 2020 – February 28, 2021 are the following:
 - Anchorage → Magadan - 95,80%
 - Magadan → Anchorage - 98,85%



AIDC

The Structure of LRM Error Messages Received from Anchorage ARTCC

Number of LRMs PAZAZQZX to UHMMZQZA	LRM type
1	LRM-RMK/RMK/28/15/... INVALID NAVAID FIX
2	LRM-RMK/62/UNDEFINED ERROR
4	LRM-RMK/RMK/01/00/UHMMZQZA ?INVALID SENDING UNIT?
4	LRM-RMK/RMK/31/14//EM08 INVALID SUPPLEMENTARY CROSSING DATA
4	LRM-RMK/RMK/43/15/* INVALID SIGNIFICANT POINT DESIGNATOR
10	LRM-RMK/RMK/18/48/OTH PBN/..... ?INVALID PBN?
23	LRM-RMK/RMK/10/7/* INVALID SSR CODE
26	LRM-RMK/RMK/57/ ?INVALID MESSAGE?
26	LRM-RMK/RMK/10/(48,64)/OTH ?R FILED IN FIELD 10A, NO *** DATA IN FIELD 10A(18)?
27	LRM-RMK/6/7/INVALID ACID
36	LRM-RMK/RMK/23/14/?430 INVALID TIME DESIGNATOR
218	LRM-RMK/RMK/18/48/OTH?INVALID DESIGNATOR?
558	(LRM-RMK/RMK/18/(48, 54)/OTH?FORMAT ERROR?)(INVALID MESSAGE SIZE)
939	TOTAL

Number of LRMs PAZNZQZX to UHMMZQZA	LRM type
1	LRM-RMK/6/7/INVALID ACID
47	LRM-RMK/26/14,15/INVALID ENROUTE POINT
323	LRM-RMK/65/INVALID MESSAGE SEQUENCE
371	TOTAL

Sending Station	Receiving Station	message amount	percentage
PAZAZQZX	UHMMZQZA	19346	
	LRMs	939	4,85%
PAZNZQZX	UHMMZQZA	11826	
	LRMs	371	3,14%

PAZAZQZX + PAZNZQZX	UHMMZQZA	31172	Total percentage
LRMs		1310	4,20%



AIDC

The Structure of LRM Error Messages Received from Magadan ACC

Number of LRMs UHMMZQZA to PAZAZQZX	LRM type
29	LRM-RMK/62/UNDEFINED ERROR
55	LRM-RMK/7/7/DUPLICATE ACID
85	LRM-RMK/6/7/INVALID ACID
169	TOTAL

Number of LRMs UHMMZQZA to PAZNZQZX	LRM type
8	LRM-RMK/13/9/INVALID AIRCRAFT MODEL
14	LRM-RMK/62/UNDEFINED ERROR
22	LRM-RMK/25/14/INVALID BOUNDARY POINT DESIGNATOR
29	LRM-RMK/7/7/DUPLICATE ACID
116	LRM-RMK/6/7/INVALID ACID
189	TOTAL

Sending Station	Receiving Station	message amount	percentage
UHMMZQZA	PAZAZQZX	19346	
LRMs		169	0,87%
UHMMZQZA	PAZNZQZX	11817	
LRMs		189	1,60%

UHMMZQZA	PAZAZQZX + PAZNZQZX	31163	total percentage
LRMs		358	1,15%



AIDC Data on ATC «Alpha» System Situational Display (Magadan)

МЕТРЫ	ФУТЫ	Атис:УХММ	МАСШ	ЗВК	АРМ СЕВЕР-1	22:33:34
СИГ	СТИ		1999	ЛАТ	Мещеряков С.О.	02.03.2021
Входящие						
22:32:06	0т Н	46616	АВІ	ТОМРИ/2242	F180	✓
22:31:35	0т Н	46616	АВІ	ТОМРИ/2242	F200	✓
22:31:15	0т АЖ	CES7316	CPL	VALDA/2315	F380	✓
22:14:10	0т Н	26099	АВІ	АКИСА/2226	F170	✓
Исходящие						
Согласованные						
26099	26099	1621	АКИСА			-
CES7316	B306Y^BGFP	7064	ЖАЛДА			W
На управлении						
Бд	Рейс	Rep^SEL	ВРЛ	Точка	Вр	Увед
→	PAC947	N855GT^DKJQ	4157	АРНАП	22:57	ПЗ
→	CES216	B305X^ENC6	7050	АРНАП	23:05	ПЗ

ботка

МЕТРЫ ФУТЫ

Атис:УХММ

МАСШ

ЗВК

АРМ СЕВЕР-1

22:34:17

СИГ

СТИ

RVSM

КМЧ

-

1999

ЛАТ

Мещеряков С.О.

02.03.2021

Входящие

22:33:58

От Н

46616

АВІ

ТОМРИ/2245

F180

✓

22:32:06

От Н

46616

АВІ

ТОМРИ/2242

F180

✓

22:31:35

От Н

46616

АВІ

ТОМРИ/2242

F200

✓

22:31:15

От АЖ

CES7316

CPL

VALDA/2315

F380

✓

22:14:10

От Н

26099

АВІ

АКИСА/2226

F170

✓

Исходящие

22:33:37

Для АЖ

CES7316

АСР

Подтв.

VALDA/2315

F380

✓

Согласованные

26099

26099

1621

АКИСА

22:30

F150 > Н

-

CES7316

B306Y^BGFP

7064

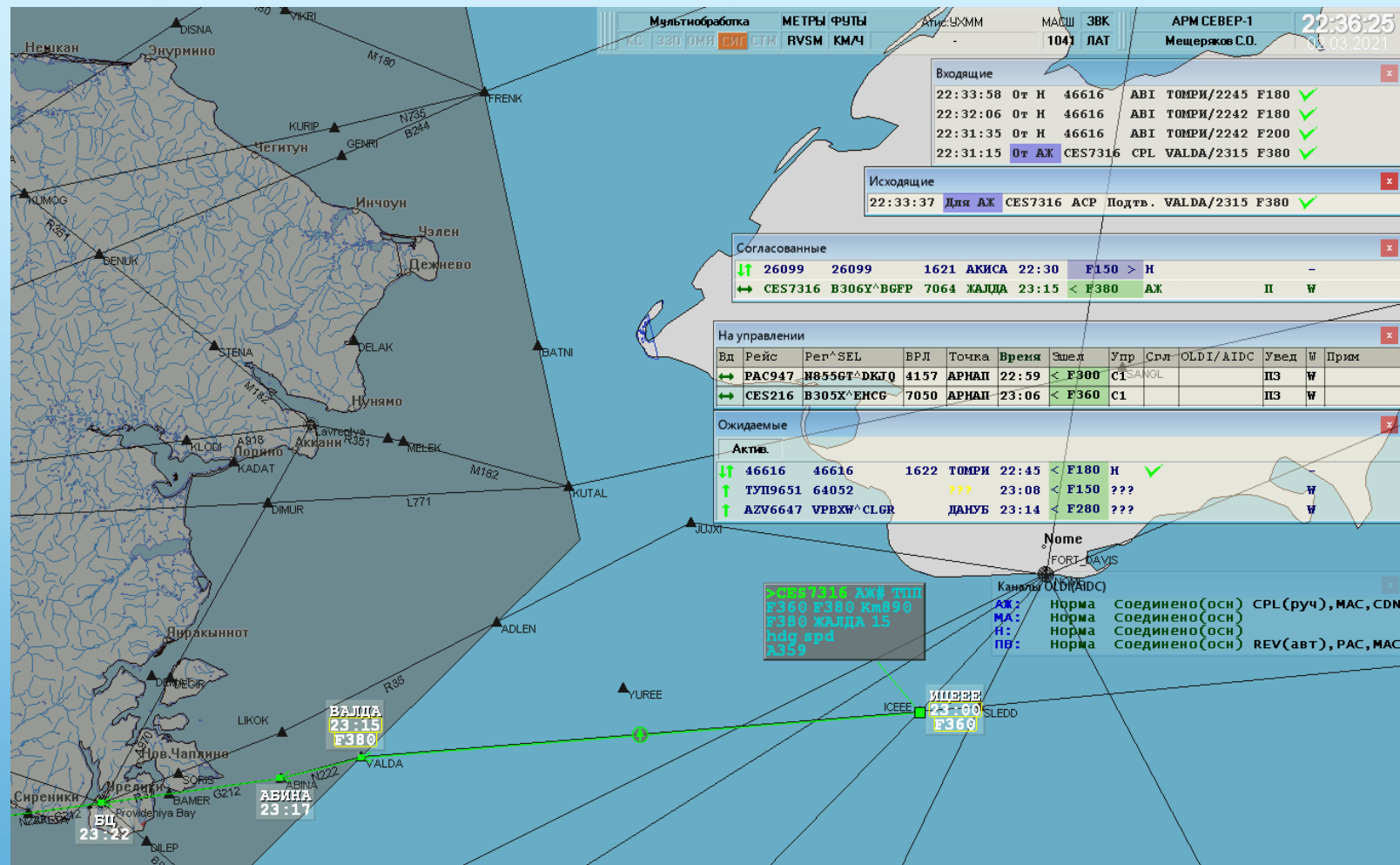
ЖАЛДА

23:15

< F380

АЖ

W





Implementation Plan

In the course of operational testing we are identifying the possible errors and are eliminating their causes. The software is quickly modified in Magadan ACC when necessary. These measures has already helped decrease significantly the number of errors during the AIDC coordination.

In fact, the operational testing of the voiceless AIDC interaction has already allowed reducing the air traffic coordination workload for ATC. The AIDC implementation will allow enhancing the airspace capacity of the Magadan ACC sectors.



THANK YOU!