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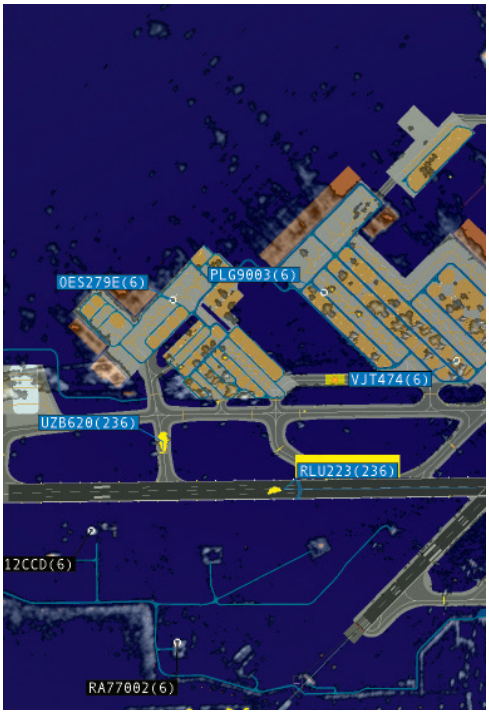
"TETRA" AERODROME MULTILATERATION SURVEILLANCE SYSTEM

PURPOSE

"TETRA" is intended for detection, surveillance and identification of aircraft during the flights in aerodrome area, takeoff and landing, taxiing and parking, as well as of transportation vehicles and ground based objects equipped with transponders and present within the terminal zone.



ADVANTAGES

The basic advantage of "TETRA" Aerodrome Multilateration Surveillance System is possibility of architecture based both on unified and distributed time. Design and technical solutions as well as radar data processing algorithms applicable, allow using the advantages of both techniques and do ensure high efficiency of the system, which implies the following:

» detection of aircraft and transportation vehicles on the aerodrome surface within the limits of movement area;

» detection of aircraft within the limits of aerodrome zone at altitudes of up to 100m, and in approach zone at a distance of up to 10km from the runway thresholds;

» accuracy of up to several meters of defining position of surveillance objects with data renewal rate of 1s;

» exercising the function of monitoring of aircraft approach for landing on to parallel runways with maintaining aircraft landing altitudes;

» flexibility of placement architecture and geometry for the system elements owing to simultaneous application of the principles of unified and distributed time;

» high fault-tolerance and independence from the third alien systems including global satellite navigation;

» automatic monitoring of technical status of system elements;

» radar data recording and storage within 30 days;

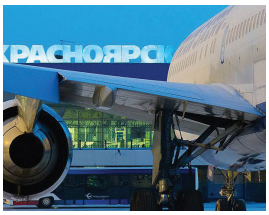
» ensuring growth of terminal traffic capacity and safety;

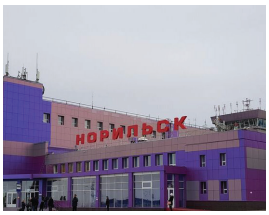
» low expenses for arrangement and subsequent operation of ground-based stations.

“TETRA” AERODROME MLSS PROJECTS IMPLEMENTED

Moscow – Vnukovo


Moscow – Sheremetyevo


Krasnoyarsk



Norilsk – Alykel

Belarus – Minsk

Depending on aerodrome configuration, “TETRA” Airport Multilateration Surveillance System may include the following as components:

» up to 134 stations, which ensure coverage of area of any configuration, excluding such a way formation of blind zones caused by complex terrain or by infrastructure of an object;

» up to 150 mobile radio beacons, which ensure identification and surveillance of transportation vehicles located on the aerodrome movement area.

SPECIFICATIONS

Operation modes	S, A/C, 1090ES
Operating frequency of interrogation	1030±3.0
Operating frequency of reception	1090±3.0
Signal polarization	vertical
Data renewal rate	1 s
Capacity	not less than 250 targets
Detection probability for any kind of target:	>99.9%
» On the runway and taxiways	within 2 s
» At parking areas and apron	within 5 s
Probability of correct identification of targets	≥99.9%
Accuracy of target location defining:	RMS-error
» Aerodrome maneuvering area	≤7.5 m
» Zones of parking, zones at a radius of less than 4.6 km from the runway threshold for aircraft	≤20 m
» Zones at a radius from 4.6 km up to 9.6 km for aircraft	≤40 m
Output data format	ASTERIX Categories 10,19,20,21,23
Compliance with standards	ICAO Annex 10, Vol. 4 Eurocae ED-117, ED-129A

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