Radio communication system

Air Navigation Services Agency – ANSA in order to meet its needs for communication services, currently has radio systems installed in two locations (VHF and UHF).

Currently, ANSA provides APP and TWR/GND services. In order to meet the needs for provision of services to these two units and in order to communicate with the aircraft in these two areas, the air traffic controllers use the ground-air communication with dedicated frequencies. Currently there are two types of frequencies that are used in these areas.

The VHF frequencies are used to control the civilian traffic (the authorities to regulate the use of these frequencies are ARKEP/KFOR-ICAO and ground-air UHF frequencies that belong to military bandwidth, the authority to regulate the use of these frequencies is KFOR).

Taking into account the operational needs that we currently have, such are the taking over the responsibility over the airspace for over flights in Kosovo, as well as the opening of new air corridors with the neighboring countries, one needs to make a new redesign of the airspace and the new needs on the radio signal coverage in the Republic of Kosovo.

This redesign includes opening of new areas for flights in different levels, and for that purpose in addition to APP and TWR services that are provided in lower airspace, one should also provide the ACC service which is divided in specific airspace, in compliance with the new redesign of airspace.

Voice communication between air traffic controller and the pilot of an aircraft in certain airspace is performed with radio in specific frequencies, which implies that with opening of new areas, one should add new frequencies with new radio systems, in order to cover the existing and new designated areas of responsibility (TWR, APP, ACC).

In addition, in order to have a safe coordination between the air traffic controller and the pilot, and in order to ensure the highest degree of safety concerning the communications in compliance with aviation standards, it is required that all the frequencies that are used for communication in specific area should be based on a redundant system (which can be operated from at least two independent locations).

The aim of this project is to implement a ground-air radio communication system which should be in compliance with the highest international civil aviation standards of Eurocontrol and of ICAO.

During the same time of the implementation of this system, we would ensure that the airspace of Republic of Kosovo is a safe airspace for operations, with regards to the radio coverage and radio communication.

In order to have a higher degree of safety for the flights, one should ensure that the published air trajectories and the control airspace with high interest are provided with solid radio coverage. With

the existing design the published zones such are (GND, TWR, APP) are covered with a radio communication system from two separate locations.

Based on the actual design for control and voice coordination between air traffic controllers and the pilots, for the published zones we have a coverage from only one location, which represents a shortcoming of the existing system. For the APP we have coverage only from the location of Golesh, whereas for TWR and GND we have radio coverage only from the location of ANSA.

The use of double coverage solves the problem if in certain area, due to the orography one cannot provide coverage with radio signal, therefore the second location is based on software studies in order to solve the problem of lack of coverage only from one location.

Therefore, each operative frequency which in its location consists of two radios with the setting “main/backup” is based on the international standards of aviation and should be installed in at least two independent locations from one another. With this configuration one solves the problem of lack of coverage which can be from one location, and it serves as the backup for the other set. From the operational point of view, the air traffic controllers may chose the location they want to transmit from, whereas for the reception of the signal from the pilot, the system chooses automatically based on the Best Signal Selection.

We have organized many meetings with the relevant departments such are Quality, Safety Department, Air Traffic Control regarding the operational/technical needs and from these meetings one came up with a common document “PSF 18-004-SAA Safety Assessment” through which one included all the operational/technical needs as well as the hazards and mitigations that have to be implemented with this project. Based on this needs that are emphasized in this document, one prepared the technical specification which took into account all these operational/technical needs be in from safety aspect, also from operational/technical aspect.