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Nowadays, scientists from various disciplines and public agencies are using remote sensing systems for scientific researches and solving public problems. One example of these remote sensing systems is radar technology. Radar has not been used to detect bird movements for a long time. Increasing numbers of meteorological radars have given countries access to more and more meteorological data. Countries have come together in agreement as EUMETNET / OPERA to share their data. This open source accessibility has helped scientists to advance their research. Ornithologists, entomologists and ecologists, are now able to extend their research limits. To an intercontinental scale and study subjects such as ecology of bird migration, conservation, flight safety, insect migration, invasive species and zoonosis specifically from insects the ENRAM (European Network for the Radar Surveillance of Animal Movement) Program funded as a COST (European Cooperation in Science and Technology) Action since 2013 by the European Union has provided a framework in which application of meteorological for biological studies is advanced.

Detecting bird movements with meteorological radars located on the African-Eurasian bird migration flyway is very important for Turkey and Europe. Migratory birds coming from Eurasia breed there and pass over Turkey when they are going to overwintering areas in Africa and their return from Africa to Eurasia. In this preliminary study bird movements over Turkey are detected using Turkish Meteorological Radar Network. This study is important because it enables better understanding and solution of problems of intercontinentally moving living creatures through collecting comprehensive information on their biology, ecology, conservation, insect invasion, diseases and flight safety. The studies that will take place in Turkey will also fill huge gaps in the studies taken place in Europe.

In this study, the data belonging to a C Band single-pol Çatalca/İstanbul, 370 meters above sea level, and collected between 22 March - 5 April 2015, are visualized. The meteorological radar moments, "Equivalent reflectivity factor", "Radial velocity of scatters away from instrument" and "Doppler spectrum width" are graphically evaluated by visual inspection to final the presence of birds. Verification is accomplished through observations made via 6 ornithologists and bird radar currently collecting bird movement data in İstanbul New Airport Project.

In September 2014, at the beginning of construction phase, a bird radar had been deployed to İstanbul New Airport Project to ensure flight safety by preventing possible bird-aircraft collisions. Considering the opening date of İstanbul New Airport, which is planned to take place in the first quarter of 2018, the bird radar has been deployed 4 years earlier than the opening date and is used to continuously collect data. This is the first of its kind as very early deployment study in Turkey, in Europe, as well as in the World. This kind of long term bird radar data naturally becomes a basis for scientific research, sheds a light to using meteorology radars in order to detect birds from long distance for flight safety, and also generally enables studying of bird migration paths.

The bird radar placed in İstanbul New Airport Project located approximately 30 kilometers away from the Çatalca Weather Radar, is a pulsed two antennas, and aims to detect bird movements in the airside. Horizontally scanning antenna is S Band, 30 kW, 2.3 degrees horizontal and 25 degrees vertical beam width. The vertically scanning antenna is X Band, 25 kW, 0.95 degrees horizontal and 20 degrees vertical beam width, Pulsed Radar. Thanks to the bird radar, is possible to confirm the presence of diurnal and nocturnal bird migration by the data gained from Çatalca radar. Moreover knowledge of the species of the birds detected by the radar is also verified by ornithologists, working in the Airport since 2014. Consequently, a door is cracked open to develop advanced level of algorithms which could identify bird species in radars.