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The legal status of civil unmanned aircraft and limitations associated with the performance of flights by civil unmanned aircraft

(Abstract of the doctoral thesis)

Keywords: unmanned aircraft vehicle, remotely piloted aircraft system, model aircraft, airspace, unmanned aviation.

The increasing popularity of commercial, executed in recreation, hobby and sport purposes flights with unmanned aircraft vehicles (UAVs), popularly called drones, made a necessary implementing legal frames of flight operations. The existing legal barriers restrict wider and faster implementing of unmanned aircarfts to the airspace on similar rules like manned aircrafts. The key is to give an answer for the questions how and why legal rules limit the UAVs access to the airspace and how they should look like and what issues should specify the legal solutions that make up an unmanned objects operating rules.

In the doctoral thesis there is briefly presented a history of the development of unmanned aviation and the process of use in other than military aims. It is also showed a wide range of applying unmanned objects along with examples of exploiting them, advantages and disadvantages of UAVs use in a chosen types of operations.

In relation to a rapid development of the unmanned aviation the nomenclature of unmanned objects is changing. At present, talking about UAVs we should take the whole of the unmanned aviation, however provisions of the law should refer to the most dynamically opening branches of this aviation in the form of remotely piloted aircrafts and model aircraft. There is necessary to underline that UAV is only a part of unmanned system, therefore, the law should refer to unmanned aircraft systems and particular elements of them. That's why, the definitions of particular elements forming unmanned systems are significant. The doctoral thesis shows also the possible types of ranking the different kinds of unmanned objects.

The factors, which restrict UAVs flights, are technical insufficiencies and in particular the lack of appropriate anti-collision systems. The choice of the proper model of anti-collision system is a legislative issue, therefore, in the doctoral thesis there are showed various features which systems could fulfill.

Because of the beginning of the legislative solutions in the UAVs sector, there is described
most often only the mode of operating UAV in the visual line of operator’s sight. The study also presents more advanced methods of carrying out the flights, which in the future should also be taken into account in the work of legislation.

With increasing amounts of the unmanned objects, there can appear a problems with ensuring that UAVs will not be used in illegal purposes. It is important to establish rules that will ensure the victims and the injured the possibility of defining the perpetrator and getting compensation in the similar way like by the road accidents. That’s why it is necessary to embrace as big as possible amount of UAVs with the duty of registration and the duty of operator’s insurance.

The structure of the airspace causes, that the airspace consists of many different zones, which often limit the flights of civil aircrafts. These limits generally concern also civil UAVs. In the doctoral thesis were described the zones, which cause the biggest restrictions in the UAVs flights. There were also made considerations about an availability of the polish airspace for civil UAVs and there were done calculations, which present the extent of the restrictions with the conclusion, what kind of airspace zones are the most limiting the movement of unmanned aircrafts.