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### **Law and Technological Change: A Typology**

The traditional system of air law has been primarily created for manned aircraft, that is, aircraft whose pilot is on board. In recent years, however, the proliferation of unmanned aircraft systems (UAS), or drones, has instigated a change in the system. Several characteristics of drones have led to problems of uncertainty as well as under- and over-inclusion: simply put, many pre-existing rules have turned out to be unfitting.

The responses to the issue by the International Civil Aviation Organization (ICAO) and the European Aviation Safety Agency (EASA), the two leading regulatory bodies of air law, have been diverse. In some cases, no regulatory action has been deemed necessary. For example, Article 8 of the Convention on International Civil Aviation (titled Pilotless Aircraft) has been viewed as applying directly to drones.

More often, however, an attempt has been made to either directly or indirectly apply pre-existing rules to drones. For instance, the ICAO has declared that rules of the air apply to international UAS operations. Meanwhile, EASA has adopted rules pursuant to which drones must be registered, but electronically as opposed to on paper. In some cases, it has been necessary to establish alternative institutions, such as the specific category of operations, with its own risk assessment. Finally, it has also been hinted that transforming the pre-existing rules of airspace management may be necessary in order to create a seamless airspace for all aircraft.

These observations have led me to a typology of the approaches the legislator may employ when faced with technological change: passivity, direct and indirect application, alternative rules, and transformation. While the typology is based on a single case study of the international and European regulation of drones, it might be generalized beyond the context of air law.