aviation and unmanned aircraft [22], as well as more refined risk modelling methods from other relevant studies (see [23] - [28]).

Other elements which would require further investigation include the consideration of pilot response times to pending conflicts among remotely piloted UAVs, separation standards for the areas of operation, effects of wind and precipitation in urban environments on UAV performance, U-space system performance, as well as the inclusion of additional risk mitigation techniques, such as parachutes.

VI. Conclusions

This paper elaborated on the challenges for defining a suitable capacity value for managing U-space UAV flight operations in and urban environment. It was found that U-space would need to balance airspace demand and capacity based on as diverse set of metrics, the most important of which is collision risk between UAVs. We applied a methodology which incorporates collision risk to define the overall capacity of urban U-space airspace. The methodology was tested in a series of experiments. Results showed that allowing up to 7 UAVs per square km with up to 5500 inhabitants within the same area would meet industry specified target safety levels. It was however not possible to meet these goals for environments with higher population densities, which would require additional traffic measures such as flight plan deconfliction and airspace structuring. The impact of such measures will be addressed in ongoing studies of the DACUS project.

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