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'The In-Flight Assessment of Infra-Red Imaging Systems'

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Abstract

This paper will address the in-flight assessment of the electro-optic performance of Infra-Red Imaging Systems (FLIR etc) installed in aircraft. It will start with a discussion of the most suitable measurement that will enable us to make an assessment of the performance of the complete imager system.

The problem of making an accurate measurement of the Minimum Resolvable Temperature difference on an IR imager in an aircraft while flying is discussed. The conclusion is reached that this is not possible and that another approach must be used.

An alternative approach will be proposed that consists of accurate characterisation of the imager, on the ground and installed in the aircraft, using an Infra-Red Collimator. The results of measurements will be used to predict the performance of the imager in flight. Thence, it will be determined if the (inaccurate) flight measurements are consistent with the ground data and thus establish whether the performance of the imager is degraded in flight .