

LEANING INSTEAD OF OVERLAP

Flight Planning and Orthophotos

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When using digital aerial cameras, quality and readability of orthophotos can no longer be specified by forward and side overlap as was the case in the era of analogue aerial surveys. By continuing to use these parameters, we condemn ourselves to inaccurate measurements and poor quality and readability of orthophotos. The author compares the flight planning parameters for nine digital cameras using building leaning, rather than overlap, as the main geometric parameter.

In the era of analogue aerial surveys, which spanned almost the entire 20th century, aerial images were standardised at sizes of 24 x 24cm or 18 x 18cm with focal lengths of 150, 210 and 300mm for the first and 70, 100, 140, 200, 250 and 350mm for the latter. Image size and focal length determine a camera's Field of View (FOV) which, together with flying height, defines ground coverage (Figure 1). With such standardised equipment, the quality of orthophotos could be easily specified by defining the overlap between images (forward overlap) and strips (side overlap) together with the camera's focal length. However, the substantial growth of digital aerial surveying since the year 2000 has produced many different digital airborne cameras that offer a wide variety of frame sizes, focal lengths and pixel sizes, thus making forward and side overlap obsolete as the sole parameters for specifying flight planning for orthophoto production.

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