

24.6.2014

Comments of J. Höhle to the

**”ASPRS Positional Accuracy Standards for Digital Geospatial Data”, Rev.5 Ver.1,
of June 7, 2014**

Page 2: Reference: Dieck, R.H. A Web-address should be added.

Page 4: Observations are the absolute values of the errors. The terminology should go along with the example at page 38.

percentile – A measure used in statistics indicating the value below which a given percentage of observations (**absolute values of errors**) in a group of observations fall. For example, the 95th percentile is the value (or score) below which 95 percent of the observations may be found.

Page 8: $RMSE_{Z(AT)} = RMSE_{X(Map)}$ or $RMSE_{Y(Map)}$ of orthophoto

This seems to be a very tough demand. The influence of an elevation error (dh) on the planimetric error (dr) of an orthoimage is zero in the middle of the orthoimage and at a maximum radius (r_{max}) only 36% of the elevation error (assuming a DMCII_250 camera and overlaps of p=60% and q=20%). Using a (weighted) average radius of $r_{average} = 0.58 * r_{max}$ then $RMSE_r \approx 0.21 * RMSE_z$. This means that $RMSE_r = RMSE_x * \sqrt{2} \approx 0.21 * RMSE_z$ or $RMSE_z = 6.77 * RMSE_x$. When $RMSE_{Z(AT)} = 0.5 * RMSE_{Z(Map)}$ is required in addition then $RMSE_{Z(AT)} \approx 3.39 * RMSE_{X(Map)}$.

Page 18: Table B3 starts with pixel size of 1.25 cm. Is this really done in the US orthophoto production?

The DMCII_250, e.g., will take then the images from a flying altitude of h=250 m above ground, which may not be allowed at cities.

Page 38: The marked sentence can be dropped.

Note that percentile calculations are based on the absolute values of the errors, as it is the magnitude of the errors, not the sign that is of concern.: ~~The same effect is inherent in RMSE calculations as squaring the errors makes all values positive.~~

Page 39: Calculation error: $0.05 * 3 = 0.15$, $48 + 0.15 = 48.15$ (not 48.18)

Step 4: Compute the percentile value Q_p by interpolating between observations 19 and 20:

$$Q_p = (A[n_w] + (n_d * (A[n_w + 1] - A[n_w]))) = (48 + (0.05 * (51 - 48))) = 48.158$$

The 95th percentile (Q_p) of the sample data set is 48.158.