The image coordinate correction function in *Australis* is the commonly used 10-parameter model employed in digital close-range photogrammetry. The calibration parameters can be grouped as follows:

- Camera interior orientation: \( c,\ xp,\ yp \)
- Radial distortion parameters: \( k_1, k_2, k_3 \)
- Decentring distortion parameters: \( p_1, p_2 \)
- Affinity, non-orthogonality parameters: \( b_1, b_2 \)

The corrected image coordinates \((x_{\text{corr}}, y_{\text{corr}})\) can be calculated from the measured coordinates \((x_{\text{meas}}, y_{\text{meas}})\) be using the formulas:

\[
   x = x_{\text{meas}} - xp
\]
\[
   y = y_{\text{meas}} - yp
\]

\(x\) and \(y\) are now with respect to the principal point.

\[
   r^2 = x^2 + y^2
\]
\[
   dr = k_1 \cdot r^3 + k_2 \cdot r^5 + k_3 \cdot r^7
\]
\[
   x_{\text{corr}} = x_{\text{meas}} - xp + x \cdot \frac{dr}{r} + p_1 \cdot \left( r^2 + 2x^2 \right) + 2 \cdot p_2 \cdot x \cdot y + b_1 \cdot x + b_2 \cdot y
\]
\[
   y_{\text{corr}} = y_{\text{meas}} - yp + y \cdot \frac{dr}{r} + p_2 \cdot \left( r^2 + 2y^2 \right) + 2 \cdot p_1 \cdot x \cdot y
\]

It is noteworthy that \(b_1\) & \(b_2\) are invariably set to zero.

The additional parameters (calibration values) extracted from *Australis* should be applied as per these correction equations, without change of sign. Thus, calibration terms in *Australis* can be thought of as corrections and not calibration ‘errors’.

For information regarding the adopted origin of the \(xy\) image coordinate system, see Appendix B of the *Australis* Manual.