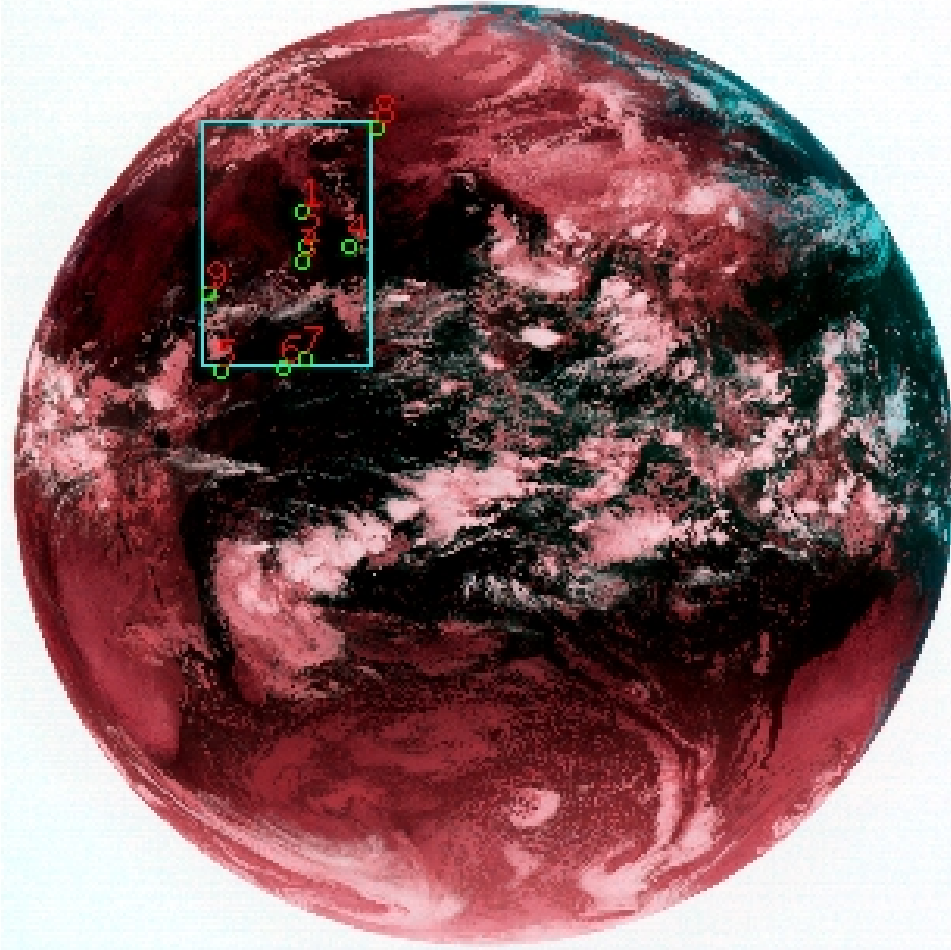


DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_19JUN2020_2145

Satellite INSAT-3DR **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 19-06-20/21:45 **Station ID** BES **Field View(deg)** 18.006
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(80.959N,-7.06W)

(80.959N,155.243E)



(-81.025S,-7.06W)

(-81.025S,155.243E)

GCP Distribution overview for 3RIMG19JUN20202145L1BDQE

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 9

GCP Coverage(%) 25.00 **(N-S)** 17.38 **(E-W)**

Location Error(E)

Legend — 0Km < E <= 50Km — 50Km < E <= 100Km — E >100Km

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | 1.273 | N | 1.137 | 1.707 |
| Across | -1.885 | W | 0.890 | 2.084 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.809 | 0.518 | 20.236 |
| Along | 6.537 | 5.622 | 63.414 |
| Across | 7.527 | 7.453 | 88.169 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 3.027 | 0.574 | 1.08 | 1.224 |
| Across | 1.748 | -0.555 | 0.64 | 0.848 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.01335 | -0.02811 | 0.30550 |

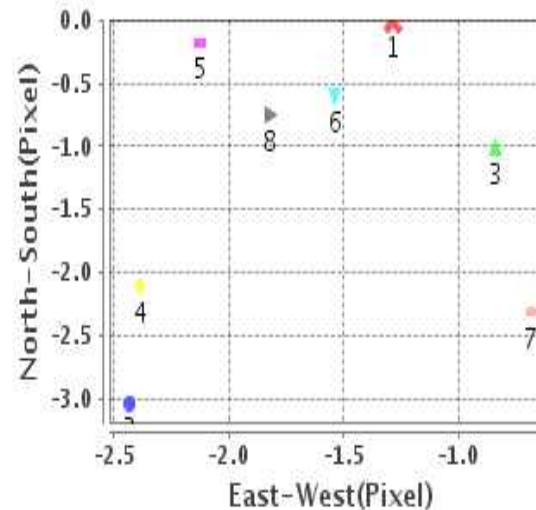
Reference Used

| Sensor | Resolution | Projection |
|--------|------------|------------|
| ETM | 500.00 | GGP |

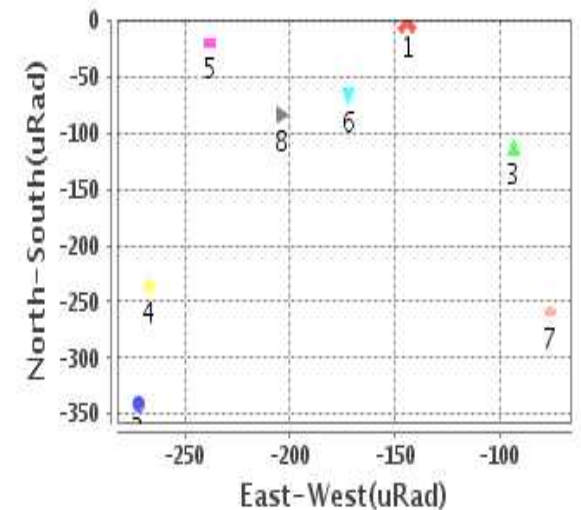
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 2.432 |
| Min | 1.220 |
| Max | 4.956 |
| CE90 | 3.259 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 20-06-20 |
| Sensor | IMG | DQE Date | 26-06-2020 |
| PassType | NONE | Aquisition Date | 19-06-20 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 21:45 |
| Sat Altitude(m) | 3.6E7 | Nominal Altitude(Km) | 3.6E7 |
| Station | BES | Predicted Altitude(Km) | -999.99 |
| Sat Location(deg) | -999.99 E | Nominal Center Lat(deg) | 0.0 |
| Format | hdf5-1.8.8 | Nominal Center Lon(deg) | 74.0 |
| LvlOfProcessing | STANDARD | Predicted Center Lat(deg) | -999.99 |
| DP JobId | 3RIMG_19JUN20 | Predicted Center Lon(deg) | -999.99 |
| ProductCode | NONE | | |
| Field View(deg) | 18.006 | | |

Projection Parameters

| | |
|--------------------------------------|----------|
| Projection | None |
| Ellipsoid | WGS_84 |
| Datum | WGS_84 |
| Zone | NotAvail |
| Semi_Major_Axis(Km) | 6378.14 |
| Semi_Minor_Axis(Km) | 6356.75 |
| Standard_Parallel1(deg) | -999.99 |
| Standard_Parallel2(deg) | -999.99 |
| Projection_Origin_Lon(deg) | -999.99 |
| Projection_Origin_Lat(deg) | -999.99 |
| Projection_False_Easting(Km) | -999.99 |
| Projection_False_Northing(Km) | -999.99 |

Scene Center Desc

| | |
|--------------------------|---------|
| Centre Lat(deg) | -0.033 |
| Center Lon(deg) | 74.092 |
| Centre Roll(deg) | -999.0 |
| Centre Pitch(deg) | -999.0 |
| Center Yaw(deg) | -999.0 |
| SunElevation(deg) | -999.99 |
| SunAzimuth(deg) | -999.99 |
| SatElevation(deg) | -999.99 |
| SatAzimuth(deg) | -999.99 |

Scene Corner Desc

| | |
|--------------------|---------|
| NW_Lat(deg) | 80.959 |
| NW_Lon(deg) | -7.06 |
| SW_Lat(deg) | -81.025 |
| SW_Lon(deg) | -7.06 |
| NE_Lat(deg) | 80.959 |
| NE_Lon(deg) | 155.243 |
| SE_Lat(deg) | -81.025 |
| SE_Lon(deg) | 155.243 |

Band Wise Details

| | Res_AL(Km) | Res_AX(Km) | Image Height | Image Width |
|-------------|------------|------------|--------------|-------------|
| MIR | 4.0 | 4.0 | 2816 | 2805 |
| SWIR | 1.0 | 1.0 | 11264 | 11220 |
| TIR1 | 4.0 | 4.0 | 2816 | 2805 |
| TIR2 | 4.0 | 4.0 | 2816 | 2805 |
| VIS | 1.0 | 1.0 | 11264 | 11220 |
| WV | 8.0 | 8.0 | 1408 | 1402 |

GDQE Computation Base

| | | | | | | | |
|-------------------|----------------|--------------------------------------|--------|-------------------------------|------------|----------------------------|-----------|
| Projection | MER | Wildpoint Rejection Threshold | 2.60 | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | -sigma | SemiMinorAxis(m) | 6356752.31 | Used Reference Type | REFINSREF |
| Datum | WGS_84 | Unit | pixels | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3RIMG19JUN20202145L1BDQE

(-999.99 - Not Available/Not Computed)

| Ref.No | Source | File Name | Resolution (m) | Projection |
|--------|--------|-----------------|------------------|------------|
| 1 | ETM | world_Band1.img | 500.0 | GGP |

Location Accuracy

GCP Distribution Statistics

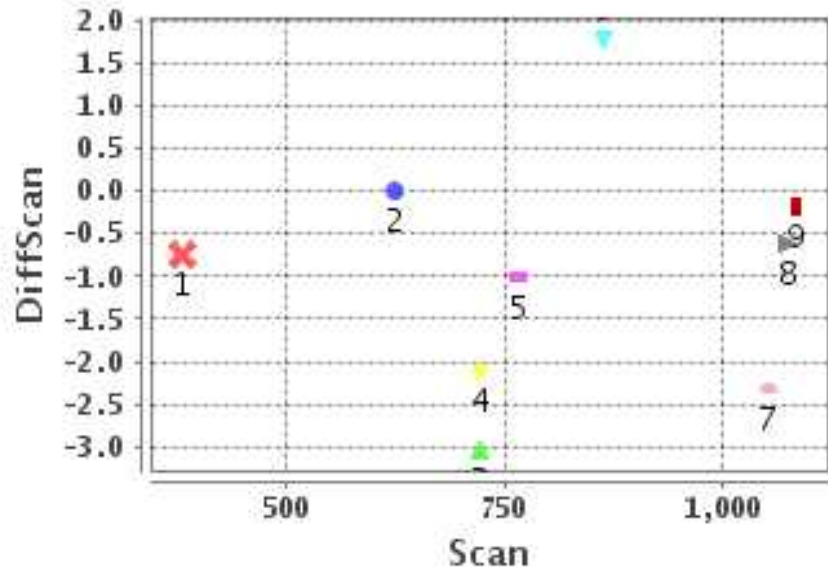
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 9

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 810.1 | 221.8 | 380.2 | 1084.25 | 25.00 (N-S) |
| GCP Pix | 839.2 | 146.9 | 592.0 | 1079.50 | 17.38 (E-W) |

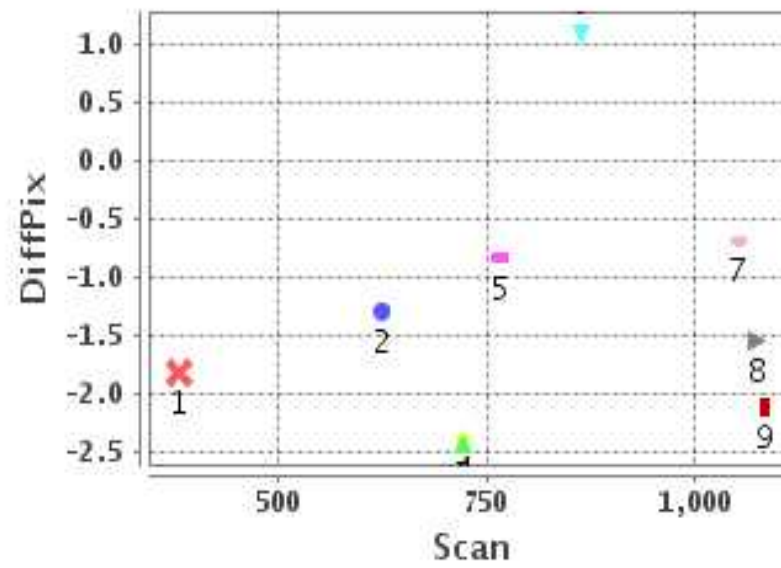
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 625.0 | 860.0 | -0.0 | -1.29 | 0.223 | N | 6.326 | W | Accepted |
| 2 | 721.5 | 866.0 | -3.0 | -2.43 | 13.444 | N | 14.572 | W | Accepted |
| 3 | 767.2 | 863.5 | -1.0 | -0.84 | 3.991 | N | 2.958 | W | Accepted |
| 4 | 722.5 | 997.5 | -2.1 | -2.39 | 8.273 | N | 10.074 | W | Accepted |
| 5 | 1084.2 | 622.5 | -0.2 | -2.12 | 0.662 | S | 8.802 | W | Accepted |
| 6 | 1074.2 | 806.5 | -0.6 | -1.54 | 1.546 | N | 4.630 | W | Accepted |
| 7 | 1052.2 | 865.0 | -2.3 | -0.68 | 8.965 | N | 4.162 | W | Accepted |
| 8 | 380.2 | 1079.5 | -0.7 | -1.82 | 4.947 | N | 8.789 | W | Accepted |
| 9 | 863.2 | 592.0 | 1.8 | 1.11 | 9.207 | S | 9.434 | E | Rejected |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



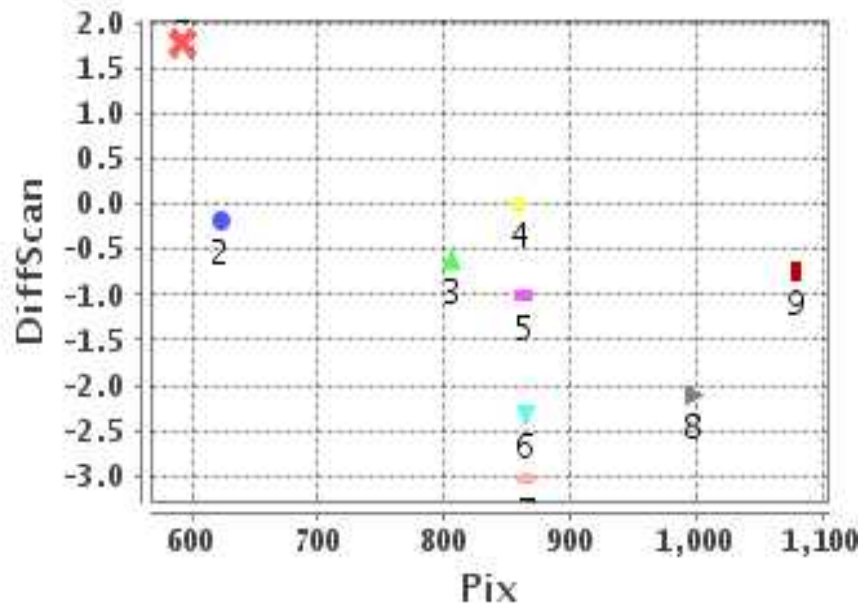
Number Of Points

| | |
|-------|---|
| North | 7 |
| South | 1 |
| East | 0 |
| West | 8 |

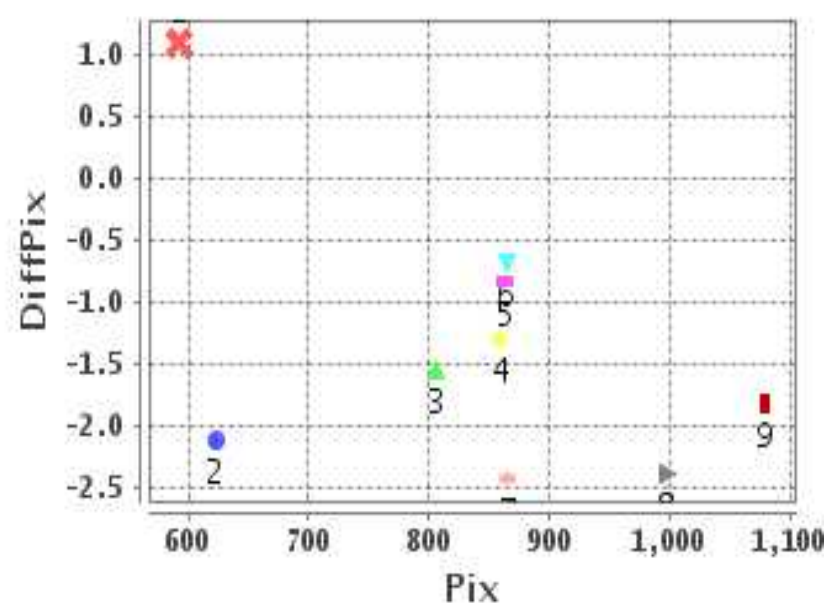
Radial Error (Km)

| | |
|------|-------|
| Mean | 2.432 |
| Min | 1.220 |
| Max | 4.956 |
| CE90 | 3.259 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | 1.273 | 1.137 | 1.707 | N | 1.310 | 1.824 |
| Across (Km) | -1.885 | 0.890 | 2.084 | W | 1.752 | 2.211 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | |
|--|-------------|-------|
| Scan Range-0-937; Pix Range-0-934 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 5.886670000 | N |
| Across(Mean,Dir) | -7.95 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 5.37 | 34.16 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 2.02 | 1.01 |
| Across(Mean,Stddev) | 0.35 | 0.80 |

| | | |
|---|-------|-------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 6.615 | N |
| Across(Mean,Dir) | -9.43 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 6.07 | 51.78 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 1.36 | 0.00 |
| Across(Mean,Stddev) | -0.57 | 0.00 |

| | | |
|--|---------|----------|
| Scan Range-0-937; Pix Range-1869-2805 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---|---------|-------|
| Scan Range-937-1876; Pix Range-0-934 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 3.28333 | N |
| Across(Mean,Dir) | -5.87 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.54 | 13.41 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -1.92 | 0.22 |
| Across(Mean,Stddev) | -1.01 | 0.43 |

| | | |
|--|---------|----------|
| Scan Range-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---|---------|----------|
| Scan Range-937-1876; Pix Range-1869-2805 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|--|---------|----------|
| Scan Range-1876-2816; Pix Range-0-934 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---|---------|----------|
| Scan Range-1876-2816; Pix Range-937-1869 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|--|---------|----------|
| Scan Range-1876-2816; Pix Range-1869-2805 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

*-999 : no gcp available

* -999.99 : values are not computed