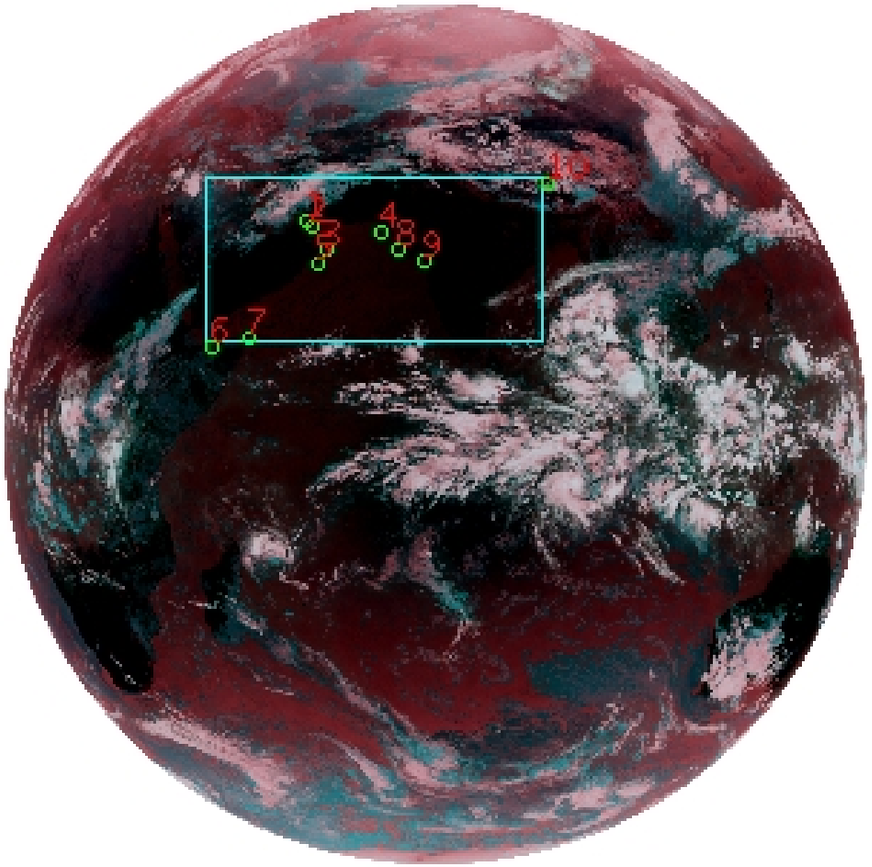
# DQE Report: Location Accuracy of INSAT-3DR-IMG STANDARD (FULL DISK) Product 3RIMG_10NOV2018_0615

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | STANDARD |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 10-11-18/06:15 | **Station ID** | BES | **Field View(deg)** | 18.006 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(81.042N,-7.157W) (81.042N,155.157E)



(-81.042S,-7.157W) (-81.042S,155.157E)

GCP Distribution overview for 3RIMG10NOV20180615L1BSTD

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 10

**GCP Coverage(%)** 18.26 **(N-S)** 37.77 **(E-W)**

**Location Error(E)**

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

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 1.217 | N | 0.483 | 1.309 |
| Across | -3.342 | W | 1.316 | 3.592 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 3.577 |
| **Min** | 1.627 |
| **Max** | 6.123 |
| **CE90** | 4.673 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.450 | 0.317 | 11.256 |
| Along | 4.679 | 0.975 | 16.978 |
| Across | 4.402 | 0.327 | 10.044 |

## Internal Distortion (in IR Pixels)

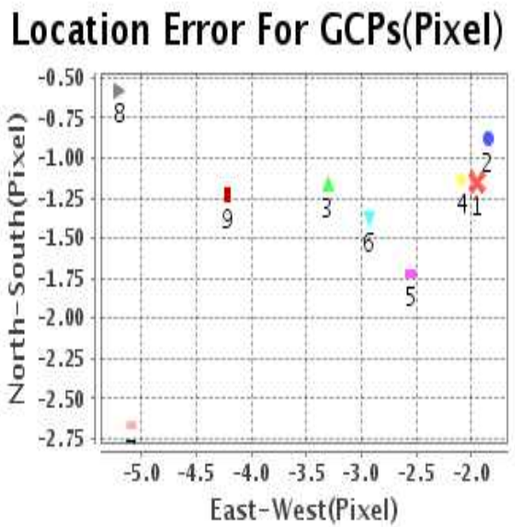
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 2.091 | 0.107 | 0.59 | 0.602 |
| Across | 3.351 | 0.351 | 1.31 | 1.352 |

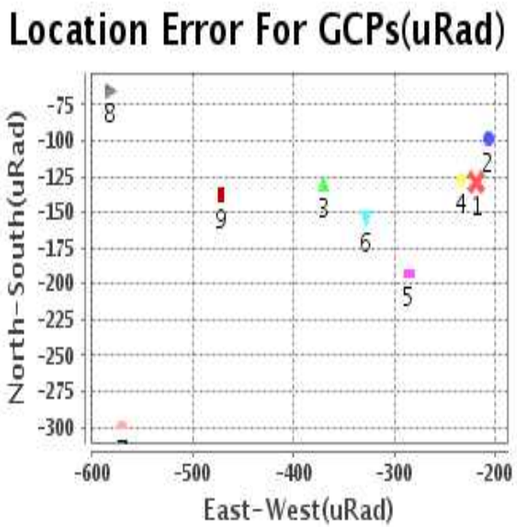
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.02238 | -0.00761 | -0.00386 |

## Reference Used

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



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 10-11-18 |
| Sensor | IMG | DQE Date | 12-11-2018 |
| PassType | NONE | Aquisition Date | 10-11-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 06:15 |
| 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_10NOV2 | 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) | 0.0 |
| Center Lon(deg) | 74.0 |
| 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) | 81.042 |
| NW_Lon(deg) | -7.157 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | -7.157 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 155.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 155.157 |

## 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 -sigma | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | | 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 :** **3RIMG10NOV20180615L1BSTD**

(-999.99 - Not Available/Not Computed)

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

# Location Accuracy

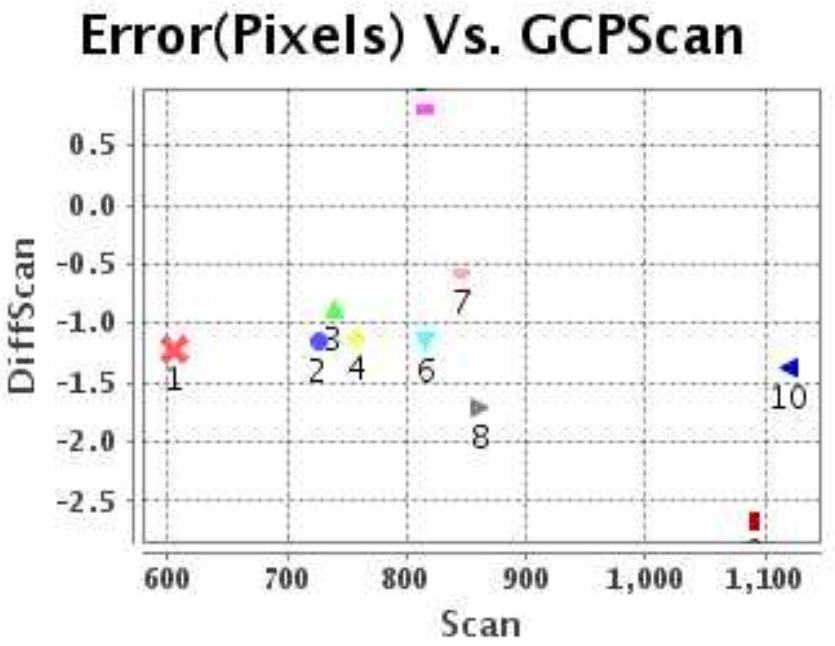
## GCP Distribution Statistics

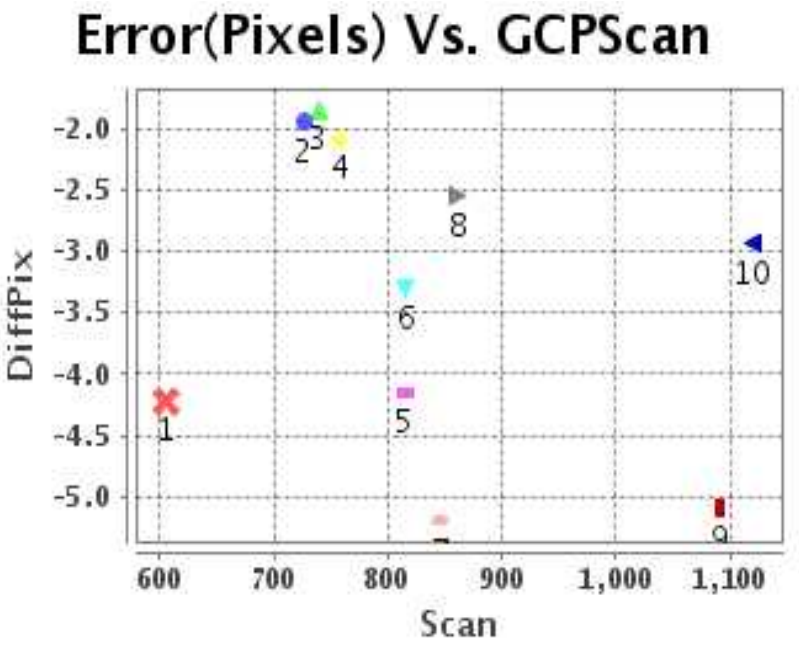
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 837.5 | 150.8 | 605.0 | 1119.25 | 18.26 (N-S) |
| **GCP Pix** | 1114.4 | 285.0 | 684.0 | 1743.50 | 37.77 (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 | 726.2 | 982.5 | -1.2 | -1.95 | 4.281 | N | 7.918 | W | Accepted |
| 2 | 739.2 | 1001.8 | -0.9 | -1.85 | 3.325 | N | 5.593 | W | Accepted |
| 3 | 815.5 | 1050.2 | -1.2 | -3.30 | 3.224 | N | 13.912 | W | Accepted |
| 4 | 757.5 | 1221.2 | -1.1 | -2.08 | 3.343 | N | 8.152 | W | Accepted |
| 5 | 861.5 | 1022.0 | -1.7 | -2.55 | 5.718 | N | 11.802 | W | Accepted |
| 6 | 1119.2 | 684.0 | -1.4 | -2.93 | 5.081 | N | 14.642 | W | Accepted |
| 7 | 1090.5 | 808.2 | -2.7 | -5.09 | 9.025 | N | 22.768 | W | Accepted |
| 8 | 814.5 | 1276.5 | 0.8 | -4.15 | 5.989 | S | 14.470 | W | Rejected |
| 9 | 846.0 | 1353.8 | -0.6 | -5.20 | 2.948 | N | 18.457 | W | Accepted |
| 10 | 605.0 | 1743.5 | -1.2 | -4.22 | 6.879 | N | 17.054 | W | Accepted |



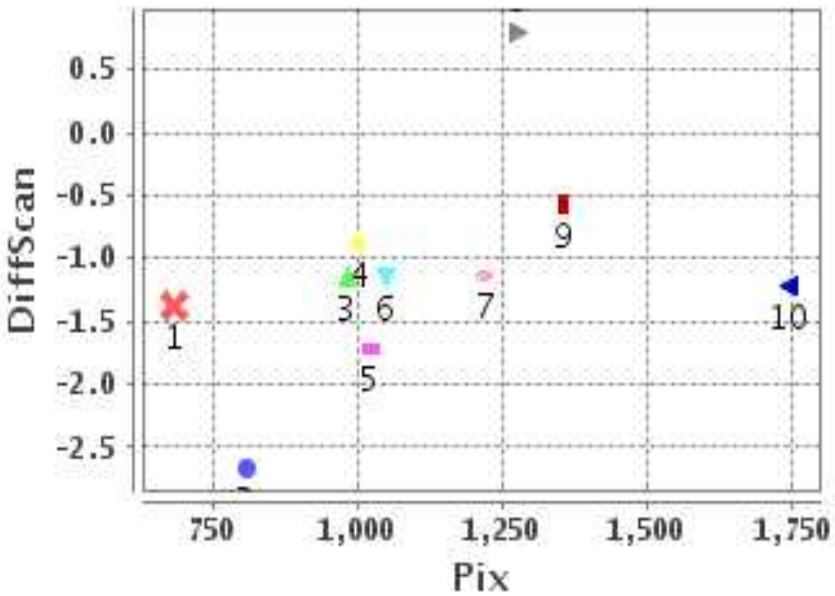



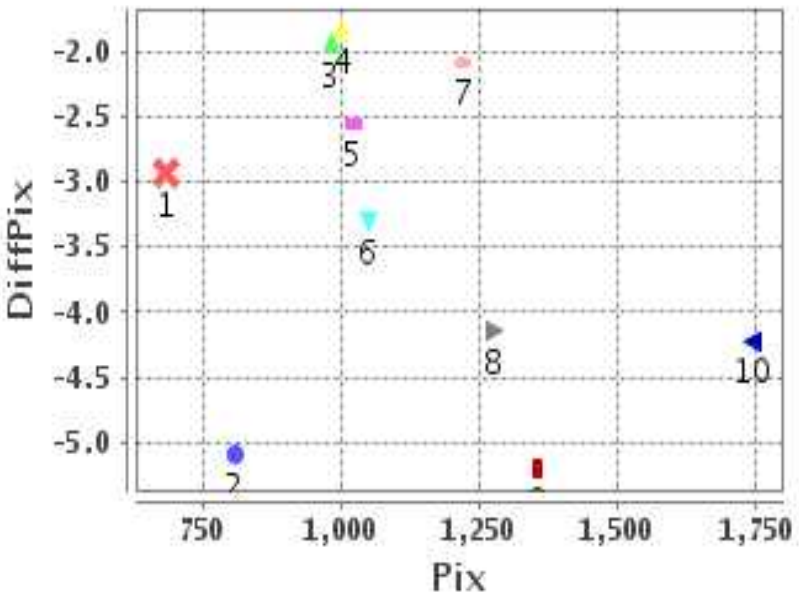

**Number Of Points**

| | |
|---|---|
| North | 9 |
| South | 0 |
| East | 0 |
| West | 9 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 3.577 |
| Min | 1.627 |
| Max | 6.123 |
| CE90 | 4.673 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| **Along( Km )** | 1.217 | 0.483 | 1.309 | N | 1.137 | 1.364 |
| **Across ( Km )** | -3.342 | 1.316 | 3.592 | W | 3.235 | 3.777 |

# Block-Wise Geo location Error Statistics

## Location Accuracy,Scale,ID

**Scan Range-0-937; 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-0-937; Pix Range-934-1869**

| | | |
|---|---|---|
| **Number of GCPs** | 7 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | 4.24571 | N |
| **Across(Mean,Dir)** | -11.84 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | 4.62 | 15.46 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -0.12 | 0.34 |
| **Across(Mean,Stddev)** | 1.25 | 1.19 |

**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** | 2 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | 7.055 | N |
| **Across(Mean,Dir)** | -18.70 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | 4.41 | 10.28 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -1.29 | 0.00 |
| **Across(Mean,Stddev)** | 2.16 | 0.00 |

**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