

DQE Report: GDQE - Location parameters for INSAT-3DR-SND STANDARD Product 3RSND_31JAN2017_0630

| | | | | | |
|----------------------|----------------|------------------------|---------------|------------------------|----------|
| Satellite | INSAT-3DR | No Of Bands | 19 | Product Type | STANDARD |
| Sensor | SND | LvlOfProcess | L1B | Selected Band | 2-LWIR3 |
| DOP/Time | 31-01-17/06:30 | Station ID | BES | Field View(deg) | 6.136 |
| Res(Y,X) [Km] | (10.0,10.0) | Res(Y,X) [uRad] | (280.0,280.0) | | |

(41.315N,53.187W)

(41.315N,103.248E)



(6.844S,53.187W)

(6.844S,103.248E)

GCP Distribution overview for 3RSND31JAN20170630L1BSA1

Image Width: 384 **Image Height:** 320 **No Of GCPs:** 9

GCP Coverage(%) 56.48 **(N-S)** 95.70 **(E-W)**

Location Error(E)

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

Location Error (Km)

| | Mean | Direction | Stddev | RMS |
|--------|---------|-----------|--------|--------|
| Along | 10.179 | N | 5.868 | 11.749 |
| Across | -14.081 | W | 7.266 | 15.845 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 10.595 | 0.560 | 5.953 |
| Along | 11.706 | 5.370 | 17.064 |
| Across | 10.483 | 0.751 | 4.832 |

Internal Distortion (in Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 2.126 | 0.564 | 0.73 | 0.924 |
| Across | 2.432 | -0.443 | 0.73 | 0.853 |

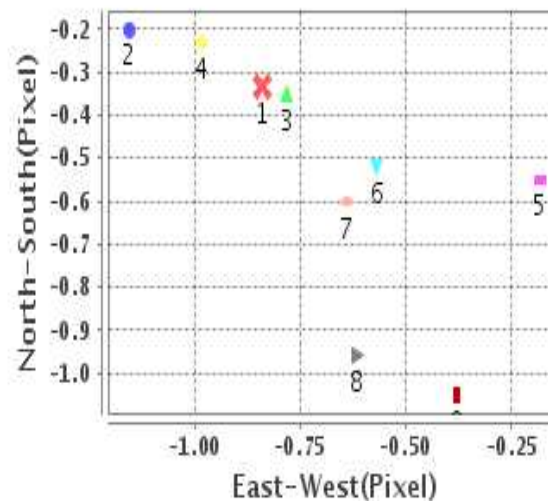
Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|---------|
| -0.02063 | -0.01782 | 0.19802 |

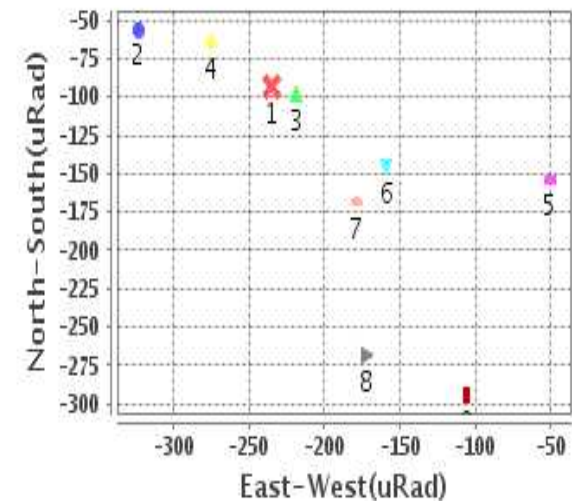
Reference Used

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

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 31-01-17 |
| Sensor | SND | DQE Date | 01-02-2017 |
| PassType | NONE | Aquisition Date | 31-01-17 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 06:30 |
| Sat Altitude(m) | 3.6E7 | Nominal Altitude(Km) | 3.6E7 |
| Station | BES | Predicted Altitude(Km) | -1000.0 |
| Sat Location(deg) | 0.0 E | Nominal Center Lat(deg) | 0.0 |
| Format | hdf5-1.8.8 | Nominal Center Lon(deg) | 74.0 |
| LvlOfProcessing | STANDARD | Predicted Center Lat(deg) | 0.0 |
| DP JobId | 3RSND_31JAN20 | Predicted Center Lon(deg) | 0.0 |
| ProductCode | NONE | | |
| Field View(deg) | 6.136 | | |

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) | 24.08 |
| Center Lon(deg) | 78.218 |
| 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) | 41.315 |
| NW_Lon(deg) | 53.187 |
| SW_Lat(deg) | 6.844 |
| SW_Lon(deg) | 53.187 |
| NE_Lat(deg) | 41.315 |
| NE_Lon(deg) | 103.248 |
| SE_Lat(deg) | 6.844 |
| SE_Lon(deg) | 103.248 |

Band Wise Details

| | Res_AL(Km) | Res_AX(Km) | Image Height | Image Width |
|--------------|------------|------------|--------------|-------------|
| LWIR1 | 10.0 | 10.0 | 320 | 384 |
| LWIR2 | 10.0 | 10.0 | 320 | 384 |
| LWIR3 | 10.0 | 10.0 | 320 | 384 |
| LWIR4 | 10.0 | 10.0 | 320 | 384 |
| LWIR5 | 10.0 | 10.0 | 320 | 384 |
| LWIR6 | 10.0 | 10.0 | 320 | 384 |

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 : 3RSND31JAN20170630L1BSA1

(-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

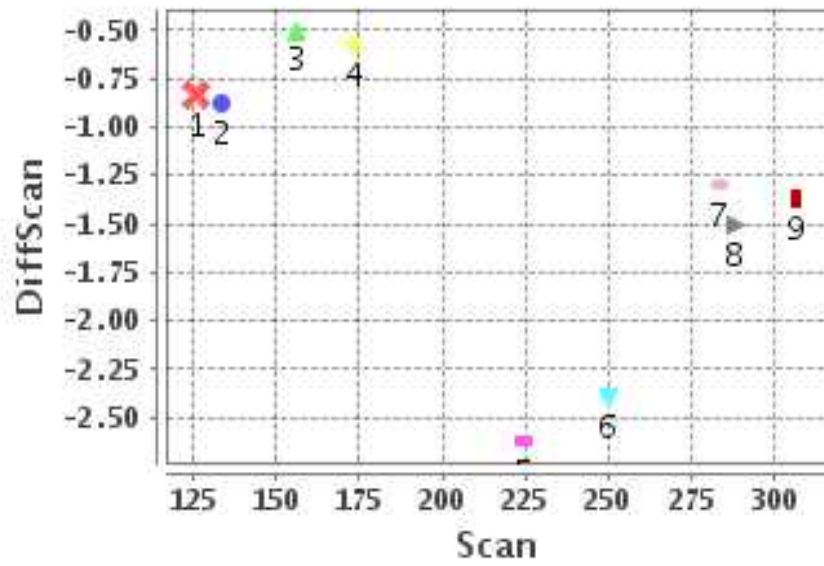
Image Width (pixels) : 384 Image Height (pixels) : 320 No of GCPs : 9

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|--------|----------------|
| GCP Scan | 215.7 | 66.2 | 126.0 | 306.75 | 56.48 (N-S) |
| GCP Pix | 182.8 | 125.4 | 3.5 | 371.00 | 95.70 (E-W) |

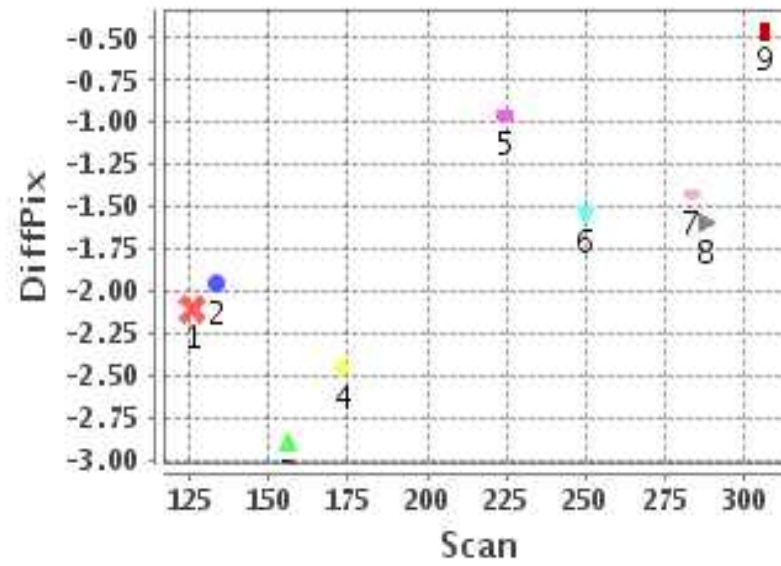
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|-------|-------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 126.0 | 3.5 | -0.8 | -2.10 | 10.378 | N | 20.944 | W | Accepted |
| 2 | 156.2 | 22.8 | -0.5 | -2.89 | 3.272 | N | 21.898 | W | Accepted |
| 3 | 133.5 | 91.2 | -0.9 | -1.95 | 5.190 | N | 19.244 | W | Accepted |
| 4 | 173.2 | 132.2 | -0.6 | -2.46 | 3.739 | N | 22.908 | W | Accepted |
| 5 | 306.8 | 201.2 | -1.4 | -0.46 | 5.961 | N | 1.969 | W | Accepted |
| 6 | 283.2 | 227.8 | -1.3 | -1.42 | 10.128 | N | 6.426 | W | Accepted |
| 7 | 288.0 | 232.0 | -1.5 | -1.60 | 15.614 | N | 14.245 | W | Accepted |
| 8 | 249.8 | 363.2 | -2.4 | -1.54 | 17.162 | N | 12.373 | W | Accepted |
| 9 | 224.8 | 371.0 | -2.6 | -0.95 | 20.165 | N | 6.724 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



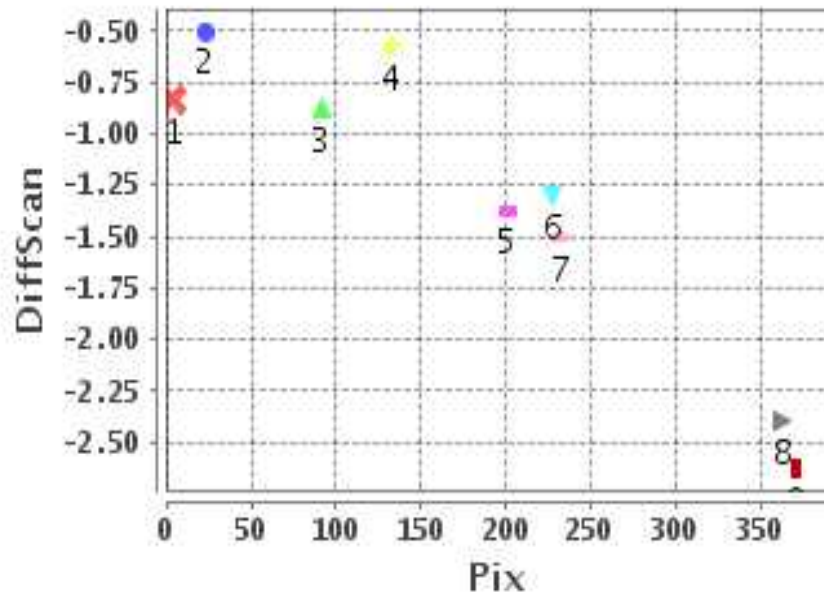
Number Of Points

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

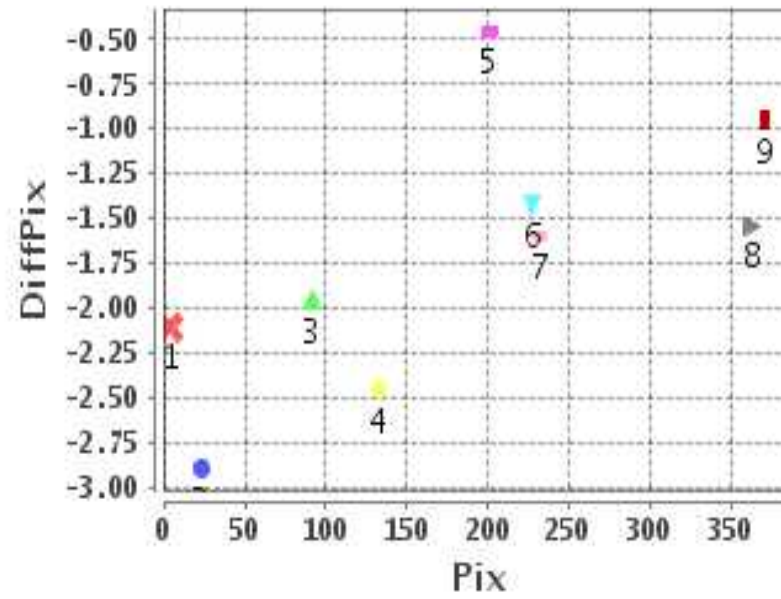
Radial Error (Km)

| | |
|------|--------|
| Mean | 18.942 |
| Min | 6.278 |
| Max | 23.375 |
| CE90 | 23.211 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|---------|--------|--------|-----|----------|----------|
| Along(Km) | 10.179 | 5.868 | 11.749 | N | 10.221 | 12.408 |
| Across (Km) | -14.081 | 7.266 | 15.845 | W | 14.726 | 16.792 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | |
|--|---------|----------|
| Scan Range-0-105; Pix Range-0-127 | | |
| 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-0-105; Pix Range-127-255 | | |
| 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-0-105; Pix Range-255-384 | | |
| 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-105-212; Pix Range-0-127 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 6.28 | N |
| Across(Mean,Dir) | -20.70 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 11.62 | 16.16 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.14 | 0.19 |
| Across(Mean,Stddev) | 0.32 | 0.47 |

| | | |
|--|---------|---------|
| Scan Range-105-212; Pix Range-127-255 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 3.74 | N |
| Across(Mean,Dir) | -22.91 | W |
| 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-105-212; Pix Range-255-384 | | |
| 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-212-320; Pix Range-0-127 | | |
| 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-212-320; Pix Range-105-255 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 10.57 | N |
| Across(Mean,Dir) | -7.55 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 9.54 | 4.65 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 0.14 | 0.07 |
| Across(Mean,Stddev) | 1.05 | 0.09 |

| | | |
|--|--------|-------|
| Scan Range-212-320; Pix Range-255-384 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 18.665 | N |
| Across(Mean,Dir) | -9.55 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 11.18 | 11.80 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.22 | 0.00 |
| Across(Mean,Stddev) | -0.59 | 0.00 |

*-999 : no gcp available

* -999.99 : values are not computed