

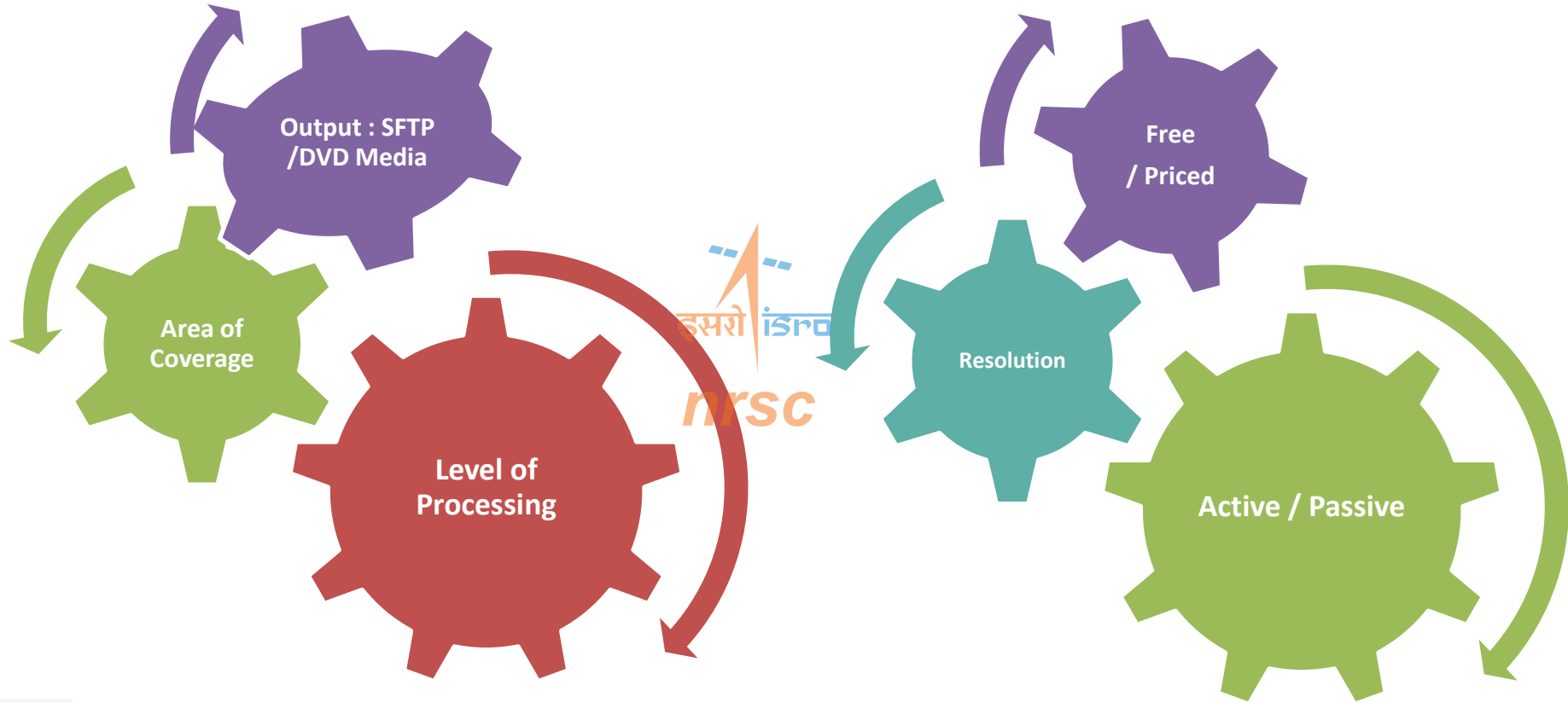
Optical Data Products

Standard and Advanced



nrsc

Remote sensing Data Products



1.0 Data Processing Levels: International Convention

L0

Level-0: Unprocessed instrument or platform data

L1

Level-1A(L1A) :Reconstructed, unprocessed instrument data at full resolution, time-referenced, and annotated with ancillary information

Level-1B(L1B): Level 1A data that have been processed to sensor units.

Level-1C(L1C) data are L1B data that include new variables to describe the spectra.

L2

Level-2 : Derived geophysical variables at the same resolution and location as the Level 1 source data.

L3

Level-3: Data products are variables mapped on uniform space-time grid scales.

L4

Level-4: Data products are model output or results from analyses of lower level data, e.g., variables derived from multiple measurements.

1.1 Data Products Classification



Advanced

- ARD
- Cloud free Composites

Geophysical

- Surface Reflectance, NDVI, NDWI
- DEM, LST, VF
- Albedo

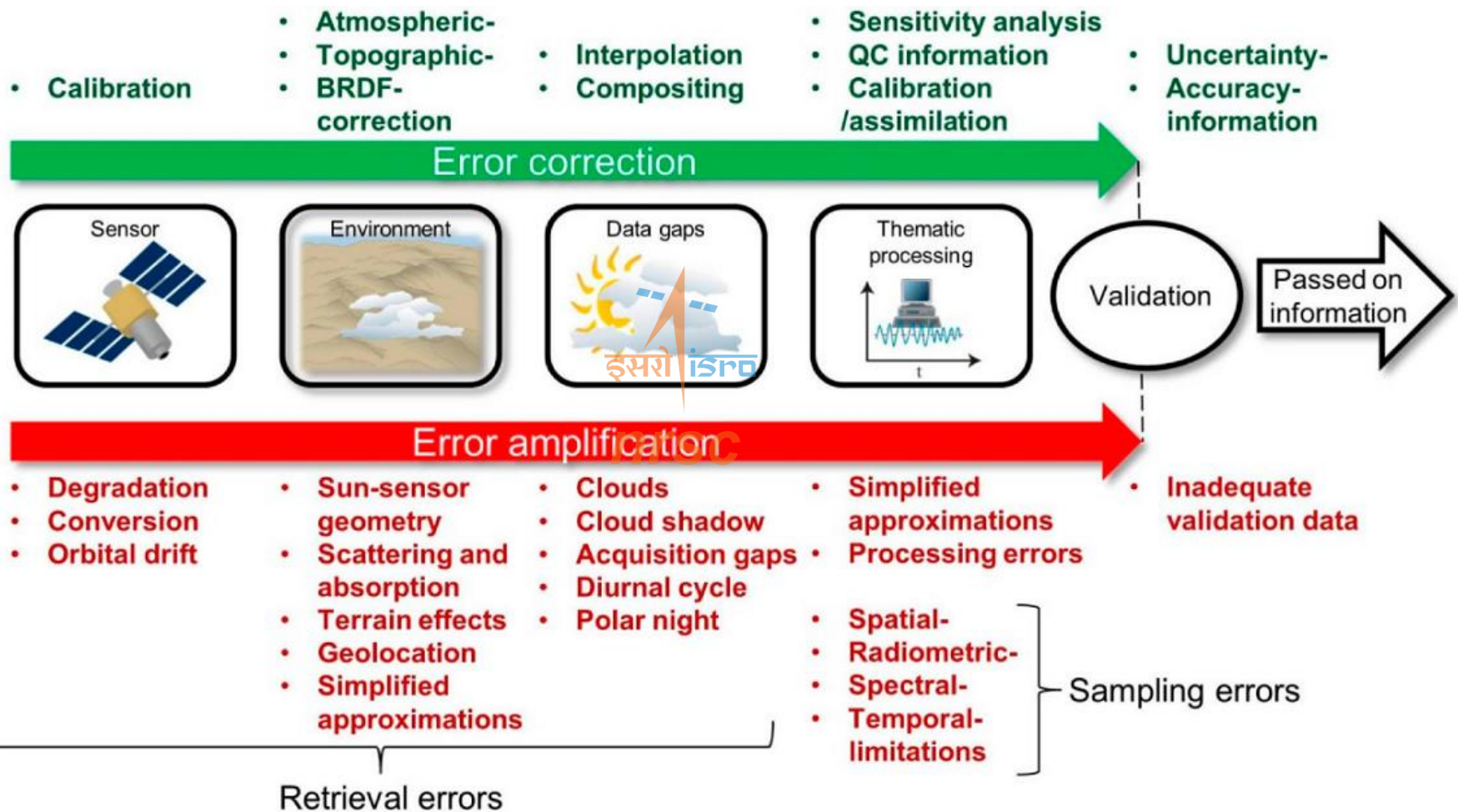
Value added

- Geocoded, Merged
- Ortho, NCC
- Mosaic

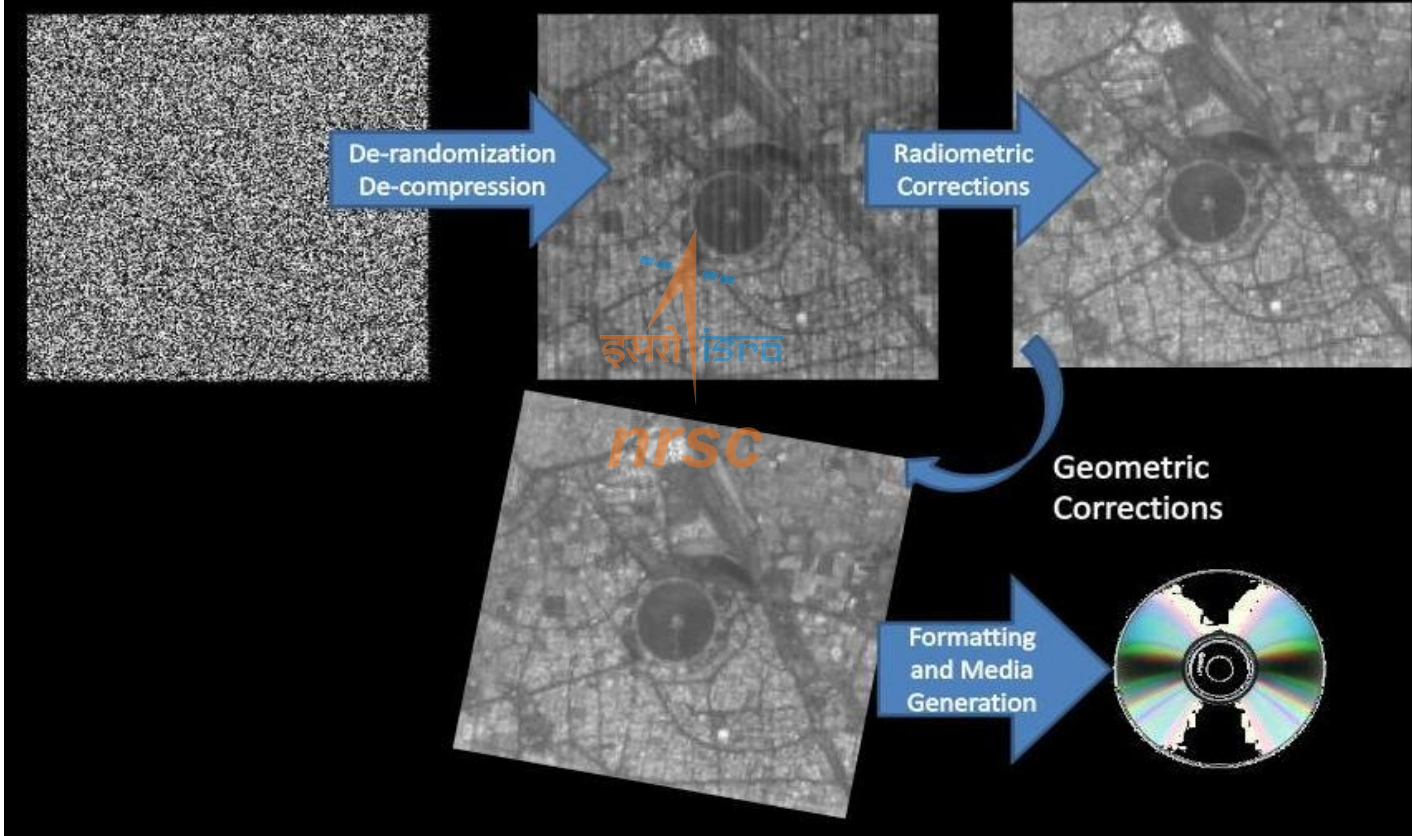
Standard

- Path/Row Based, Shift Along Track
- Quadrant, Geo referenced, Ortho-kit
- Stereo, AOI

Data product generation frame work

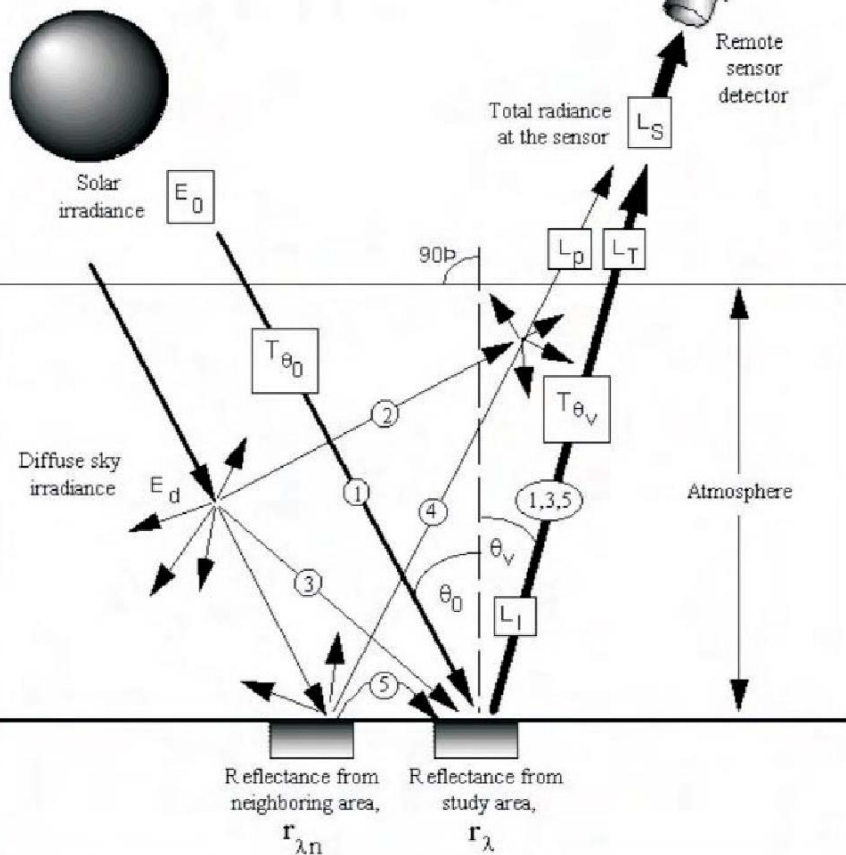


Summary of Data Pre-Processing



Surface Reflectance Product (BOA)

Various Paths of Satellite Received Radiance



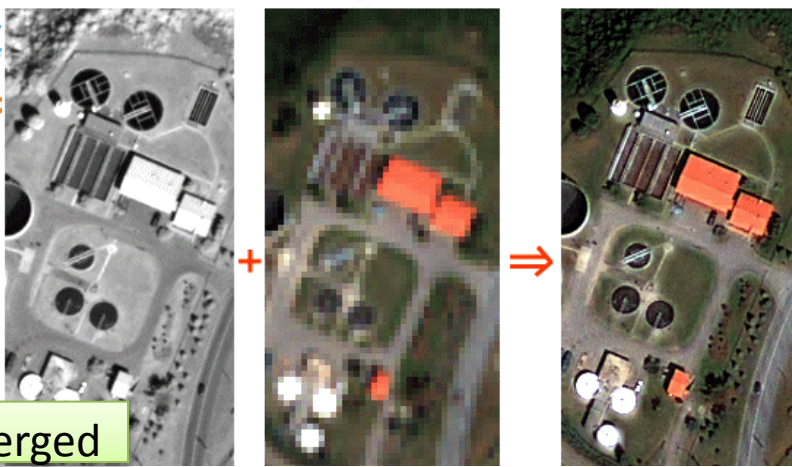
Standard / TOA product

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nrsc

Surface Reflectance /BOA product

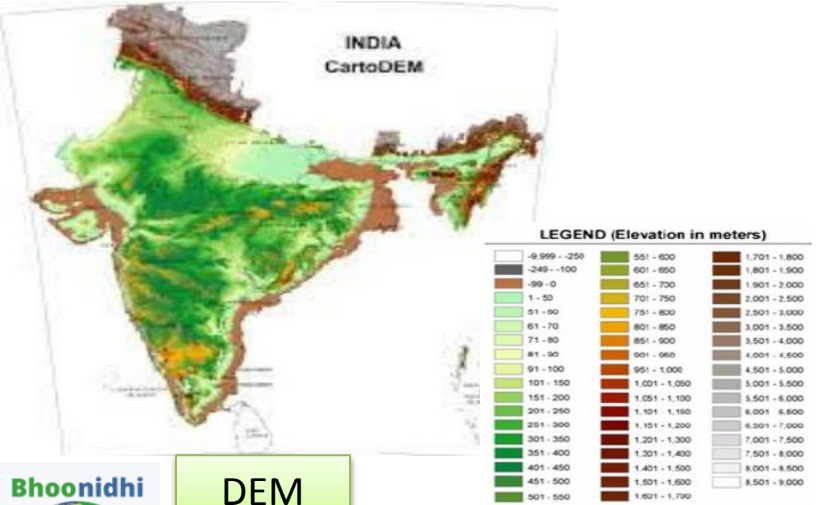




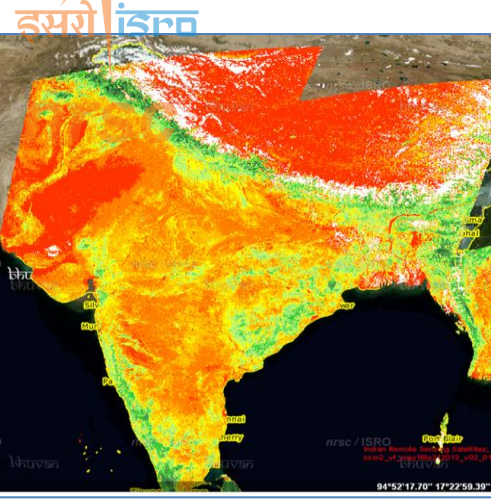
Merged



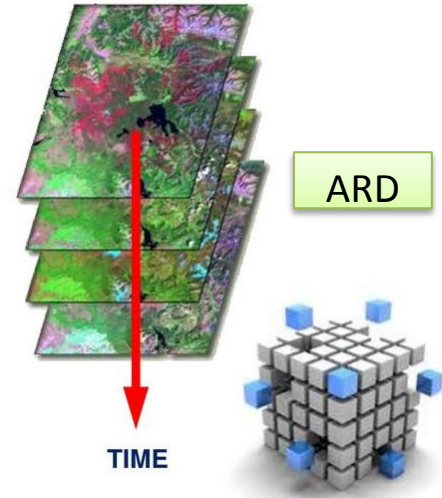
NCC



DEM



NDVI



ARD

TIME

Scene Based Product Code (9 Char unique code)

pos	Relevance	Values
1,2	Product Description	ST,FI,HK,SR
3	Projection	P,L,U,G
4	Resampling	C,N,
5,6	Enhancement	00,SR,AB,AV,ND, VF,WL..
7	Level of Processing	1,2,G,O,H
8	Format	6,7,T
9	Media	D,I

Product Formats:

- * LGSOWG - BIL, BSQ,
- * Fast format ,TIFF ,GEOTIFF
- * HDF 4 & HDF 5
- * NetCDF

Product Contents:

- * Image File
- * Meta File
- * Jpeg Snapshot

Product Accuracy:

- * Standard Med.Resol < 3 pix
- * Standard High.Resol < 20m
- * Ortho product < 1.5 pix

Products on Bhoonidhi

Resolution		Satellite	Product types	Applications
0 - 1m	Very High	C2S-PAN,C3-PAN, K3,K3A	STD,MERGED	High scale Mapping, Urban DEM –C1(10m)
1 – 5m	High	C1,C2S-MX	STD,MERGED, STEREO	
5 – 25m	Medium	L4MX,Mono,L3 SENTINEL	STD,BOA	Resources (Vegetation, Snow, Water)
25 – 100m	Low	OLI, AWIF	STD,BOA	
100-1000m	Coarse	OCM,AQUA,TERRA, JPSS,NPP,GSAT	STD	Ocean, Atmospheric, Science related

Sample Product + Metadata

ProductID= 2269163101
OTSPProductID= RA3310CT2022030606
SatID= IRS-R2A
Sensor= L3
SubScene= -NA-
GenAgency= NRSC
Path= 092
Row= 053
SegmentNumber= -NA-
SessionNumber= 1
StripNumber= -NA-
SceneNumber= -NA-
DateOfPass= 31-OCT-2022
NoOfBands= 4
BandNumbers= 2345
PassType= PLD
DateOfDump= 31-OCT-2022
DumpingOrbitNo= 030606
ImagingOrbitNo= 030606
BytesPerPixel= 2
BitsPerPixel= 10
GenerationDate= 31-OCT-2022
ProdCode= STUC00GTD
ProdType= GEOREF
InputResolutionAlong= 23.50
InputResolutionAcross= 23.50
OutputResolutionAlong= 24.00
OutputResolutionAcross= 24.00
Season= OCT
ImageFormat= GEOTIFF
ProcessingLevel= STD
ResampCode= CC
NoScans= 6967
NoPixels= 7890
StartPixel= 0

MapProjection= UTM
Ellipsoid= WGS_84
Datum= WGS84
MapOriginLat= 0.000000
MapOriginLon= 75.000000
ProdULLat= 26.954035
ProdULLon= 71.511431
ProdURLat= 26.988337
ProdURLon= 73.417354
ProdLRLat= 25.479310
ProdLRLon= 73.437660
ProdLLLlat= 25.447203
ProdLLLlon= 71.556104
ImageULLat= 26.964033
ImageULLon= 71.941728
ImageURLat= 26.988255
ImageURLon= 73.417338
ImageLRLat= 25.474165
ImageLRLon= 73.012510
ImageLLLlat= 25.447174
ImageLLLlon= 71.556113
ProdULMapX= 153613.443084
ProdULMapY= 2986128.000000
ProdURMapX= 342949.443084
ProdURMapY= 2986128.000000
ProdLRMapX= 342949.443084
ProdLRMapY= 2818944.000000
ProdLLMapX= 153613.443084
ProdLLMapY= 2818944.000000
SceneCenterLat= 26.220378
SceneCenterLon= 72.480546
StandardParallel1= -NA-
StandardParallel2= -NA-
FalseEasting= 500000.000000
FalseNorthing= 0.000000
ZoneNo= 43

Time= 31-OCT-2022 06:00:16.287313
Roll= 0.040692
SceneCenterPitch= -0.045841
SceneCenterYaw= 3.447292
SunAzimuthAtCenter= 160.551629
SunElevationAtCenter= 47.617273
ImageHeadingAngle= 194.608725
IncidenceAngle= 0.065379
SatelliteAltitude= 823.395169
Tiltangle= 0.000000
DEMCorrection=YES
SourceOfOrbit= 2
SourceOfAttitude= 1
ImagingDirection= D
B2Temp= 18.1800
B3Temp= 18.6500
B4Temp= 18.3300
B5Temp= 23.7500
B2_Lmin= 0.0000
B3_Lmin= 0.0000
B4_Lmin= 0.0000
B5_Lmin= 0.0000
B2_Lmax= 52.0000
B3_Lmax= 47.0000
B4_Lmax= 31.5000
B5_Lmax= 7.5000
Quality= Q
CloudPercent= -NA-
AcrossTrackAccuracy= 0.0
AlongTrackAccuracy= 0.0
Shift%= 0
SatelliteHeadingAngle= 194.608725
SceneStartTime= 31-OCT-2022 06:00:05.625186819
SceneEndTime= 31-OCT-2022 06:00:26.949639717
SenAzimuthAtCenter= 89.815498
SenElevationAtCenter= 89.815498
IncidenceAngleAlongTrack= 0.212457
IncidenceAngleAcrossTrack= -0.012273
ViewAngle = 0.057900
ViewAngleAlongTrack= -0.057424
ViewAngleAcrossTrack= -0.007408
ProductSceneStartTime= 31-OCT-2022 06:00:04.723951
ProductSceneEndTime= 31-OCT-2022 06:00:27.850676

