

<u>Sensor</u>	<u>Scene</u>	<u>km x km</u>	<u>Projection</u>
LISS-IV MN	full	70 x 70	UTM, TM
LISS-III	full	140 x 140	UTM, TM
AWiFS	quarter	370 x 370	LCC

- based on System Corrected products in Super Structure
- for north and path oriented products
- for different projections based on WGS84 ellipsoid and datum

- imagery provided as band separated GeoTIFFs
- RPC files in „Ikonos format“

P6 LISS-III Ortho Correction Test

- with PCI OrthoEngine, model „rational functions, Ikonos Ortho Kit“, first order RPC adjustment
- product: LISS-III, System Corrected, path oriented, 20 m, UTM, WGS84 with RPCs (26/35 07-Sep-2005)
- reference: road vector data (average accuracy ≤ 15 m)
- DEM: resolution 3 arc sec

GCPs	CPs	RMS in m		
		x	y	total
36	38	6.4	7.1	9.5
10	64	6.2	6.6	9.1
5	69	5.8	6.3	8.6
5	69	6.4	9.7	11.7
3	71	6.8	8.4	10.8

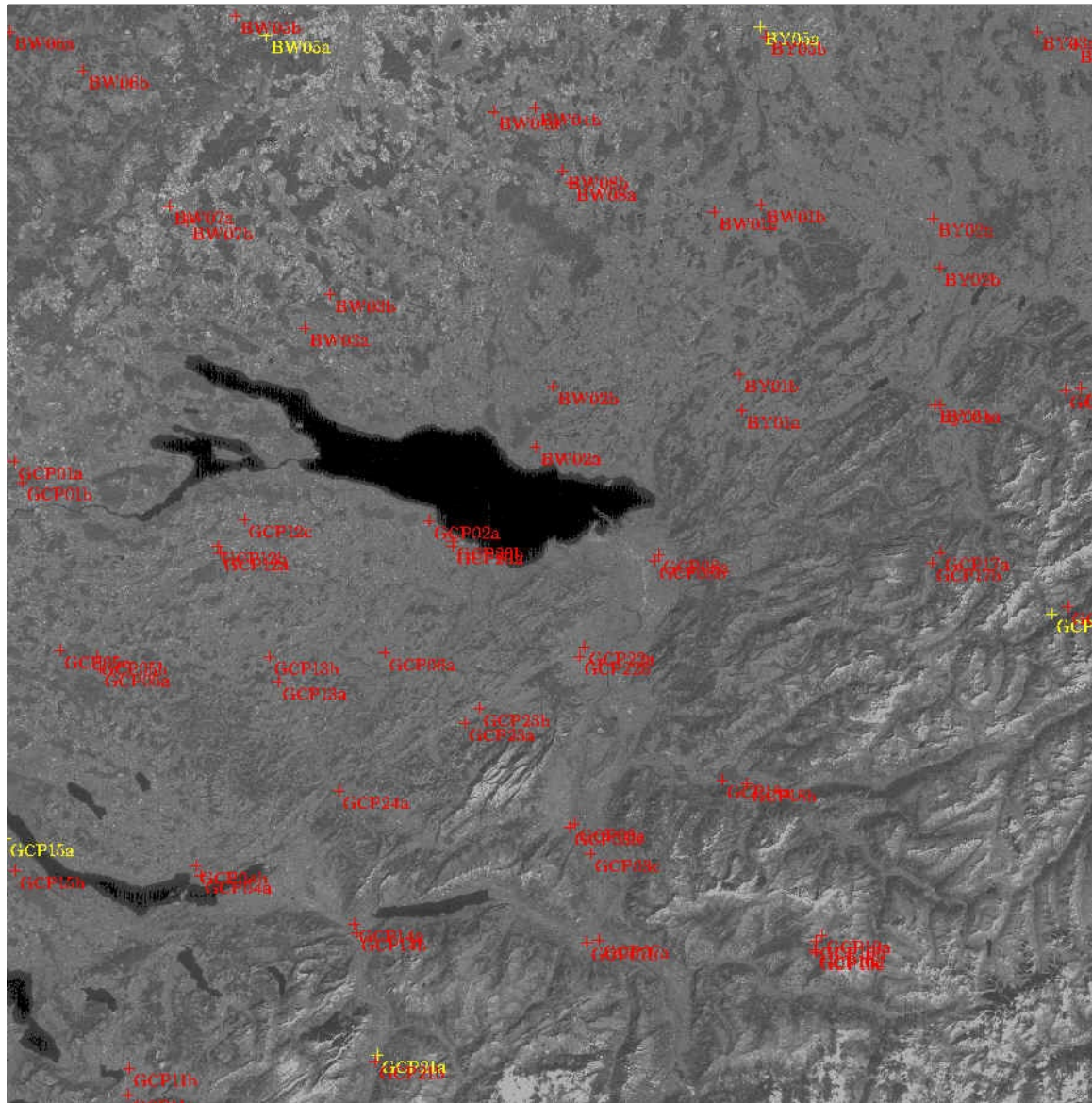
Results

- sub pixel accuracy
- accuracy in the range of the reference data

(good distribution)

(unfavourable distribution)

LISS-III with 5 Good Distributed GCPs



yellow = 5 GCPs
red = 69 CPs

x RMS = 6.0 m
y RMS = 6.2 m
Total RMS ~ 8.6 m

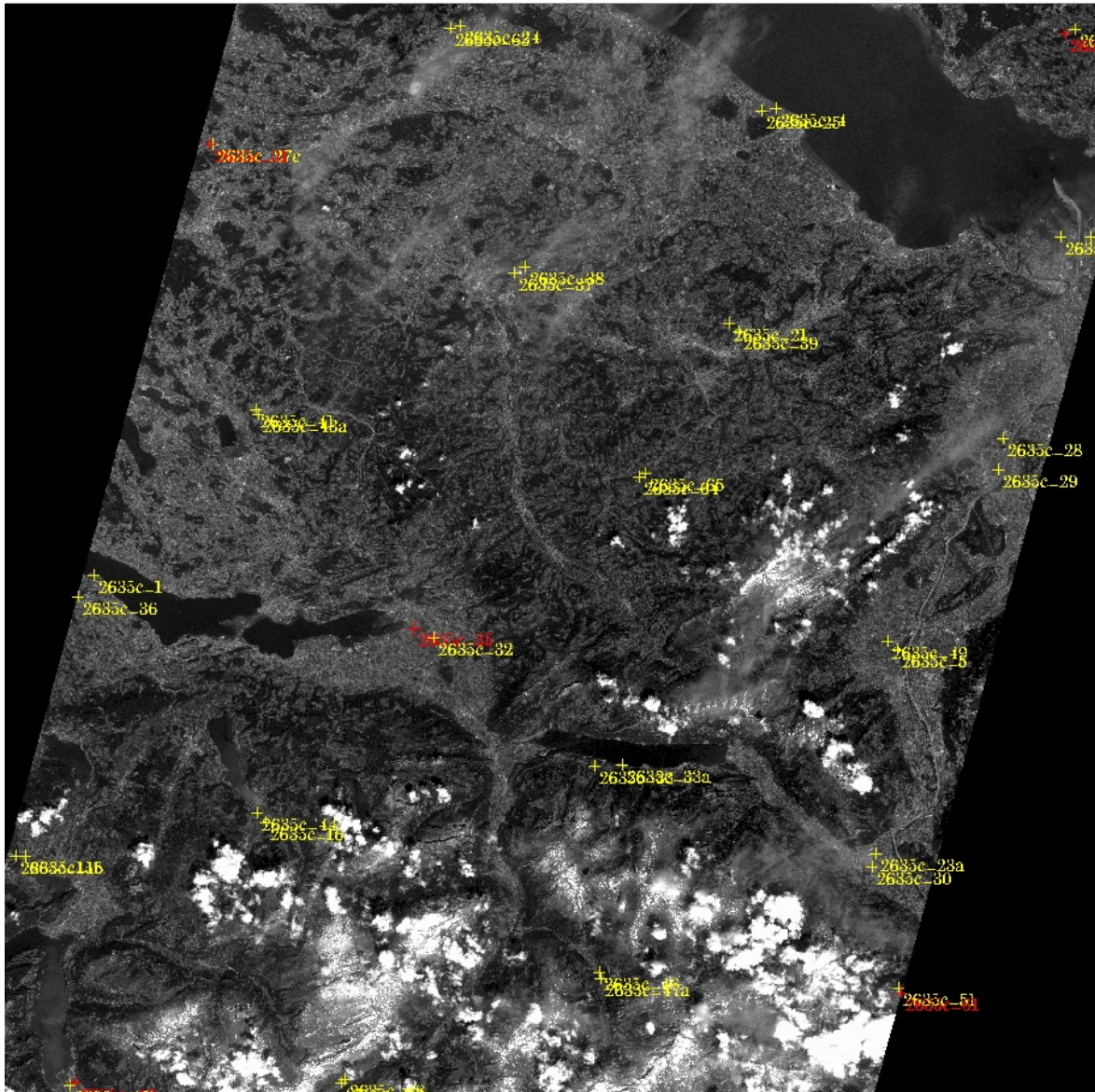
- with PCI OrthoEngine, model „rational functions, Ikonos Ortho Kit“, first order RPC adjustment
- product: LISS-IV MN, System Corrected, map oriented, 5 m, UTM, WGS84 with RPCs (26/35 C 27-Jun-2005)
- reference: road vector data (average accuracy ≤ 15 m)
- DEM: resolution 3 arc sec

GCPs	CPs	RMS in m		
		x	y	total
21	21	1.6	1.8	2.4
10	32	1.6	2.0	2.6
5	37	2.3	2.4	3.3
5	37	5.1	3.6	6.2
3	39	2.2	3.4	4.0

Results

- sub pixel accuracy
- with fewer GCPs, the lower accuracy of the reference is disturbing
(good distribution)
- (unfavourable distribution)

LISS-IV MN with 5 Good Distributed GCPs



red = 5 GCPs
yellow = 37 CPs

x RMS = 2.3 m
y RMS = 2.4 m
Total RMS ~ 3.3 m

Working with P6 Ortho Kits

Scene	Adjustment order	No. of GCPs	Tested with
LISS-IV MN	1	≥ 5	PCI OrthoEngine
LISS-III	1	≥ 5	PCI OrthoEngine
AWiFS A/C	2		PCI OrthoEngine &
AWiFS B/D	1		LPS

Especially with a low number of GCPs it is essential

- to use only reliable GCPs
- to have them well distributed over the whole image extent

See also: Lutes, James: Resourcesat-1 Geometric Accuracy Assessment

Files on CD with Ortho Kit

/050907P6026035L0000S3_ql.tfw
/050907P6026035L0000S3_ql.tif
/050907P6026035L0000S3_stat.tif
/050907P6026035L0000S3_stat.txt
/050907P6026035L0000S3_oid.txt

Product Quicklook

Histogram

EM and client order identifier

/EM_Ortho_Kit_1/

RPC file

Super Structure dump

050907P6026035L0000S3_rpc.log
050907P6026035L0000S3_rpc.txt
050907P6026035L0000S3_inf.txt
050907P6026035L0000S3_ssd.txt
050907P6026035L0000S3_tif.log
050907P6026035L0000S3_2_green.tif
050907P6026035L0000S3_2_green_rpc.txt
050907P6026035L0000S3_3_red.tif
050907P6026035L0000S3_3_red_rpc.txt
050907P6026035L0000S3_4_nir.tif
050907P6026035L0000S3_4_nir_rpc.txt
050907P6026035L0000S3_5_swir.tif
050907P6026035L0000S3_5_swir_rpc.txt

GeoTIFF files with RPCs

/PRODUCT1/

VOLUME.DAT
LEADER.DAT
IMAGERY2.DAT
IMAGERY3.DAT
IMAGERY4.DAT
IMAGERY5.DAT
TRAILER.DAT
NULL.DAT

IRS-P6 product in Super
Structure BSQ