

6. DIGITAL GEOSPATIAL DATA GENERATION AND TERRESTRIAL SCANNING FOR 3D RECONSTRUCTION OF HERITAGE SITE AT HAMPI

Project Investigator	: Dr. U.T.Vijay
Budget	: Rs. 89,53,000/-
Funding	: DST, GOI
Duration	: Upto March 2017

Background:

The Council has taken up this project under Indian Digital Heritage (IDH) programme initiated by the Department of Science and Technology, GOI. The main objective of this project is to demonstrate and document a process by which critical and valuable archaeological, cultural and heritage information can be captured and measured by using 3D Laser Scanning technologies in conjunction with Geo-spatial technologies which would be helpful in virtual tourism, restoration and reconstruction of heritage sites and also enable the extraction of information, which can substantially enhance the understanding and knowledge about archaeological and cultural aspects of heritage sites.

Objectives:

- Laser scanning and 3D Modeling of 50 world heritage monuments by using Terrestrial Laser scanner
- Creation of high resolution spatial data base (2D) for core area of Hampi heritage site
- Training on laser scanning and 3D modelling

Progress:

The execution of the project has been carried out by initiating the following activities.

- 3D Laser scanning of 45 World Heritage Monuments at Hampi has been completed against the target of 50 world heritage monuments
- Post processing, 3D modelling and generation of 3D mesh data and CAD drawings is under progress
- Generation of high resolution 2D maps on Hampi core area has been completed on various themes such as Villages, Cadastral boundary, Roads, LU/LC, Drainage and water bodies using High resolution (0.6M) Satellite imagery and SOI toposheets.
- GPS survey, Photography and Data collection of world heritage monuments along with infrastructure facilities (Drinking water, Education, Health, Roads, Banks, Hotels, etc.) of Hampi has been completed.
- Initiated the process with the Department of Archaeology, GOK and ASI to take up the 3D Laser scanning of Heritage monuments of Karnataka state under Karnataka Digital Heritage (KDH) using Geo-spatial and 3D Laser scanning technologies by scanning important historical monuments of heritage sites of Karnataka.

LASER SCANNING OUTPUTS



Laser scanning of Purandara mantapa



3D Point cloud data of Virupaksha Temple



3D Point cloud data of Sasivekalu Ganesha



3D Mesh Model of Ganesha

List of World Heritage Monuments of Hampi Scanned by KSCST using 3D Laser Scanner under IDH-Hampi Project

Sl No	Name of Monuments
1	Ugra Narasimha Statue
2	Hazara Rama Temple
3	Varaha Temple
4	Stone Chariot
5	Sasivekalu_Ganesha
6	Kadalekalu_Ganesh
7	Stone_Doors
8	Large_Public_Bath
9	Kalyani(Stepped well)
10	Mahanavami_Dibba
11	Monolithic Bull

12	Kings_Balance
13	Octoganal_Bath
14	Queens Palace Basement
15	Lotus Mahal
16	Elephant Stable
17	Queens Bath
18	Watch Tower near Lotus Mahal(Zanana Enclosure)
19	Bhimas Gateway
20	Doomed Gateway
21	Kalyani Near Doomed Gate
22	Guard's House
23	Badavi Linga
24	Octagonal Water Pavilion
25	Bojanasala
26	Shiva Temple Near Nallapura
27	Band tower in Dannanayak's enclosure
28	Palace Basement near Band tower in Dannanyak's Enclosure
29	Mohammeden Mosque in Dannanayaka Enclosure
30	Kings Palace Basement near Mint
31	Mint
32	Large Underground Shiva Temple
33	Kunthunatha(Ganagitti) Jaina Temple
34	Mohammaden Watch Tower
35	Large Stone trough
36	Saraswathi Temple
37	Chandrashekara Temple
38	Ranga Temple
39	Jaina Temple Behind Zanana Enclosure
40	Underground Shrine Chamber
41	Virupaksha Temple
42	Lofty Pillars Near Vittala Temple
43	Shiva Temple near Vittala Temple complex
44	Kalyana Mantapa near Vittala Temple complex
45	Vittala Temple near Vittala Temple complex
46	Sabha Mantapa near Vittala Temple complex
47	Saraswathi Temple inside Vittala Complex
48	Bhajana Mantapa inside Vittala Complex