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# BĪŠĀPŪR AND ITS TERRITORY (FARS, IRAN)
## *First Interim Report of the 2012 Archaeological Campaign*

*Mosayyeb Amiri,* Iranian Cultural Heritage, Handicraft and Tourism Organization (ICHHTO, Shiraz)
*Bruno Genito*, Università degli Studi di Napoli "L'Orientale" (UNO)

with contributions by:

Iranian team:
*Mohammad Reza Moini,* Director, ICHHTO, Kazerun
*Mohammad Khalil Mahmoudi,* ICHHTO, Kazerun
*Battul Khosravi,* ICHHTO, Kazerun

Italian team:
*Giulio Maresca,* PhD (UNO)
*Enzo Cocca,* PhD Candidate (Università degli Studi di Ferrara) and Research Fellow (UNO)

## *Introduction*

A joint Iranian-Italian archaeological team started the activities in the Bīšāpūr city in Fars region in November 2012[1]. The work has been

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possible thanks to the collaboration of RCICHHTO and ICAR of ICHHTO, the local base of the same Institutions of the Islamic Republic of Iran, and MAE and UNO of Italy[2].

The field project is aimed at analysing the ways and the modes in which an urban area such as that of Bīšāpūr was firstly planned, designed and built, in consideration of the particular:

1) historical importance of the city (built and founded by the Sasanian king Šahpūr I in the 3rd century AD and living at least until the 10th century AD in Islamic period)[3];
2) geo-morphological and landscape complexity of the territory where the city is located [a plain, a river (Šahpūr), water sources: Sarāb-e Ardašīr (Sarābšir) at North, Češmeh-ye Sāsān at East and Sarāb-e Dokhtarān at South, the cave (Šahpūr Cave)] (Fig.1) in the geographic context of the Kazerun Karstic Aquifer area (Milanovic, Aghili 1993; Calmard 2013);
3) rich artistic, epigraphic and iconographic documentation distributed inside and outside the city, along the river with six

Fattovich, the colleague Prof. Irene Bragantini, Dr. Andrea D'Andrea and Dr. Rosario Valentini. A particular thank is also due to Dr. Giulio Maresca (PhD) for his help as translator and any other organizational type of support as well as for his scientific contribution for the photographic and topographic documentation of the archaeological evidences with GPS and digital camera, to Dr. Enzo Cocca (PhD candidate at Università degli Studi di Ferrara and Research Fellow at UNO) for his scientific attitude and topographic survey with the GPS Trimble 5007/5008. Last but not least many thanks are also due to Mr. Hojjatollah Attai, Mr. Behnam Askari and Mr. Ali Kashkouli, and to Mr. Abd al Azim Joshan, ICHHTO, Kazerun.

[2] This activity follows two years of long organizational preparation (2010-2012) for this new archaeological project of Iranian/Italian collaboration, throughout friendly and intense contacts with Drs. Hasan Fazeli Nashli, Arash Laskhari, Seyyed Mohammad Mireshkhandari, former directors of ICAR, the Ambassador of Italy Alberto Bradanini, the cultural attaché of the Embassy of Italy Prof. Carlo Cereti, a written memorandum of Understanding on *Joint Archaeological Research Collaborations and Programs* signed by Mr. Ahmad Mirza Koshnevis former director of RCICHHTO and IsIAO in April 2011.

[3] The city was an ancient and medieval town in Fārs, and the administrative centre of one of the districts in the province of Fārs in Sasanian Iran.

different rock-reliefs[4] [the I, the earliest (celebrating victories

[4] The royal rock reliefs, on cliffs, flank the Tang-e Čowgān stream [one meaning of which as "*Gorge of the Polo game*" or "*Valley of the Polo game*" would suggest the practice of the that game in the valley, i.e. in the city (Ghirshman 1971, 22, 47, 49) but another, more plausible meaning as "*node crossing*" would instead indicate only an elaborate and complex itinerary river's point (Vanden Berghe 1959; Ghirshman 1962)] and three of them pertain to Šahpūr I himself. The earliest, on the left bank of the river, consists of a scene of investiture and triumph executed in a characteristic style of the period of Ardašīr I (224-240 AD). Šahpūr receives a diadem/ring from Ohrmazd; both figures are mounted; the god's horse tramples a prone figure, interpreted as Ahriman, beneath its hooves, and the king's horse tramples the slain Roman Emperor Gordian III. Philip the Arab, kneeling and suppliant, is the only other figure represented (Herrmann, 1969, 80-83). The Roman Emperor Valerian is not present and this element led one to think that the relief should be dated before his defeat in 260 AD, perhaps even before the formal foundation of the city (Fig. 2). Šahpūr's two other reliefs do include Valerian; the first, located on a sheltered concave surface carved in the cliff on the right bank of the river, reflects a new formula for the representation of a triumph: in the center the mounted king receives the diadem from a *putto* and not directly from the god (a possible borrowing from western iconography). Gordian is shown beneath the horse's hooves and Philip kneeling, while Šahpūr grasps Valerian by the forearm. Tiers of horsemen flank this scene; Sarfarāz (1976, fig. 31) has revealed another register of horsemen along the bottom of the relief. According to Herrmann (1969), Roman influence accounts for the lively style of this relief, though she believes the format represents the continuation of an ancient Near Eastern formula for depicting several events in a single composition (Fig. 3). The central victory scene is repeated on a larger scale in the third relief, on the left bank, always by Herrmann considered a copy of the second. In this relief (Fig. 4), Šahpūr and the three defeated enemies are represented as before; courtiers and horsemen are arrayed in two side registers (Maricq 1958, - r. 1965, 306-13; Back 1978, 290-313). Of the three remaining Sasanian reliefs, all on the right bank, the first and second repeat the older investiture formula. In the first (Fig. 5), Bahrām I (r. 271-74) is shown face to face with Ohrmazd, and both figures are mounted. At a later date Narseh (Bahrām's younger brother; 293-302 AD) substituted his own name on the relief (Herzfeld 1924, 120; MacKenzie 1981). When Sarfarāz (1976, figs. 32-33) cleared a stone conduit away from the foot of the relief, a previously unknown figure was revealed prostrate beneath the king's horse. This figure, which may also be a later insertion, has been variously interpreted as Narseh's defeated nephew, Bahrām III, or the latter's supporter Wahnām, the evil councilor of Bahrām III, supported by "Ahriman and the devils" (Herrmann 1981, 19; Humbach and Skjærvø 1978-1983, III/1, 28-29, III/2, 12-13). The second relief representing Bahrām II (r. 274-93), shows the king mounted receiving the submission of a party of Arabs on foot before him (Fig. 6). The third is a rather crude victory relief of Šahpūr II (grandson of Narsēh; 309-79 AD); the king is frontally seated on a throne while in the registers to the side various trophies are presented to him (Fig. 7). Careful observations by Herrmann (1977, 94) have produced evidence that

of Šapūr I), the II and the III (commemorating the defeat of Valerian), the IV (portraying an Arab embassy to Bahrām II), the V (Dedication of Bahrām I) and the VI (Victory of Šapūr II)], the famous statue of the king Šahpūr I in a cave (Fig. 8) and the inscription in middle Persian and Parthian on one of the celebrative columns in the city[5];

4) unique and impressive architectonic and urban evidences among which the castles (Qal'e-ye Dokhtār, Qal'e-ye Pesar), the city (Bīšāpūr), where a palace, a religious building interpreted as dedicated to the female Sasanian divinity Anāhīta[6], a Mosque and a Madrasa of the early Islamic time have been identified.

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this rude stone carving served simply as the base for what would have been a more elaborate painted plaster surface, a technique familiar in the realm of the Kushans, where Šahpūr conducted extensive campaigns (Hermann 1980; 1981). Cfr. recently Canepa (2013, 856-879).

[5] A visit to Bīšāpūr by Šahpūr in the 24th year of his reign may reflect the date when the city was completed. This visit was recorded by the scribe Aps'y in a bilingual (Middle Persian and Parthian) inscription on one of a pair of columns forming part of a commemorative monument located at the main intersection in the centre of the city (Ghirshman 1936, 123-29; Back 1978, 378-83, with notes p. 507). The event must have occurred around the 266. In the Coptic translation of the autobiography of Mānī, contemporary of Šahpūr, it is reported that the king fell sick while on a visit to Bīšāpūr and died there (Polotsky 1934, 42 ll. 11-15; Ghirshman 1971, 11, n. 1).

[6] Medieval histories contain traditions about Bīšāpūr (Schwarz 1896-1935, 30-32), tempting, for example, to identify the black flagstones that Moqaddāsī (ca. 375/985) (1876, 433) reported in the citadel Mosque with the 3rd-century mosaic pavement; Ghirshman recorded a damaged black flagstone adjacent to the mosaics. A great statue of a king found in a cave high above the gorge (Ghirshman 1962, 162-65) may be the colossal statue in a wind - and rain - swept cave mentioned by Moqaddāsī on the way to Nowbandagān (1876, 444-45). Moqaddāsī also referred (1876, 444) to a black statue, larger than life size, standing in the road at Bīšāpūr; it may have been the same statue (*pahikar*) referred to in Aps'y's inscription and represented by the remains of a plinth excavated in the monument at the main intersection of the city (Salles and Ghirshman 1936). In the 14th century Mostawfī (1892, 175; (ed.) Le Strange 1905, 126-27) reported a colossal black statue standing in a temple outside the town, but he may simply have been repeating the earlier tradition.

From an historical point of view, as is very well known, the town named Bīšāpūr[7] (*Excellent* or *Beautiful* [town] of Šahpūr[8], or *the Lord* Šahpūr)[9] was built and founded south of the modern Faliyan city along a

[7] The importance of the city in the 3rd and 4th centuries is attested by Ebn Qotayba (Ghirshman 1971, 11), according to whom Roman engineers captured by Šahpūr after his defeat of Valerian in 260, participated in building Bīšāpūr (as well as Jondīšāpūr and Šūštar in Khuzistan). Šahpūr himself in his inscription on the Ka'ba-ye Zardošt at Naqš-e Rostam, describes his battle with and victory over Valerian and the subsequent settling of Roman prisoners of war in Fārs and other provinces, without, however, giving specific geographical details (Maricq 1958, - r. 1965, 314-15; Back 1978, 324-26; Gagé 1964, 314-16). Some of the architectural remains excavated by the French and Iranian archaeologists at Bīšāpūr have been thought to reflect the influence of these Roman prisoners. Of the buildings uncovered by Roman Ghirshman (1936; 1938; 1939; 1945; 1950) only the one called "D" reveals some western influence, in its stone mosaic floors. Sarfarāz found part of the original northern city wall, where the river imposed an irregular boundary on the otherwise rectangular city plan (1969). It was articulated by an evenly spaced series of rounded towers at intervals of less than a meter, a technique that may have been derived from an antique model now known only from literary sources, as e.g. in a reference in Philo of Byzantium that Winter (1971, 117) has interpreted as a "semi-circular wall trace" and related to a rare practice of the Hellenistic period.

[8] The following interpretation by Ghirshman (1971, 14, n. 4):"*Bîchàpour tomba entre les mains des conquérents arabes en 637 (H. 16) après la conquête de Tawwadj et la bataille de Rèchar, mais la ville resta un centre de troubles et d'insurrections contre les musulmans (H. 25 645/6), à la tète desquels se trouvait le frère de Shahrak. Le gouverneur du Fars qui fut tué dans la bataille de Rechar (3). Le nom sassanide de la ville ne se conserva pas longtemps sous les nouveaux maitres du pays qui en amputèrent la première partie BI ou BIS «mieux», «bon» (4) . et c'est sous son nom arabe de Sâbûr qu'elle apparait comme ville de frappe sur les dirhems des «émissions réformées) depuis H. 80 (= 699-,00. Pendant plus d'un demi-siècle qui précéda cette date, les émissions continuaient à porter l'effigie du type Khosroès II, mais étaient datées des années de l'hégire bien que quelques rares monnaies eussent aussi porté les dates d'après l'ère de Yezdegerd III. Pendant quelques années, les deux types de monnaies furent émis parallèlement; c'est ainsi que le type Khosroès s'est trouvé maintenu jusqu'à l'année H. 83 (= 702). Le nom de Sâbûr est le plus courant sur les monnaies du type arabo-sassanide et par le nombre de gouverneurs arabes qui les frappèrent, la ville de Bìchàpour occupe la première place (5)*" seems to be not any more considered as reliable.

[9] The mostly accepted meaning of the name would derive from the Middle Persian *Bay-Šāpūr* "Lord Šāpūr" (Sundermann 1986, 294-95), found on *bullae* (Herzfeld 1938, 418; *Byšpwhr*), on a seal (Gignoux 1978, 15f; *Byš'pwhr*), in the 5th-century Middle Persian inscription of Eqlīd (Frye 1970, 155; probably *Byhšpwhl*), and in the Coptic Manichean homilies (Sundermann cit., 294; *Bašabahōr*). Finally, the letters BYŠ on Sasanian coins

node in a maelstrom of a small river, by the Sasanian king Šahpūr I (241-272 AD).

The economic investments and both the social mechanisms and territorial changes relating to the land use and to the water supply necessary in order to let such an urban area to be formed and developed (the town in itself is about 137 ha, 1,416.944 sq km), were the political results of a precise town planning of the Sasanian dynasty, which has not been yet archaeologically, in detail, detected, as well as the particular geological configuration of the plain and the historical background of the area. Such an imperial program of the King presents different grounds which should be further investigated and that the excavations of the last century in the 30s-50s by the French[10], and in the 70s-80s by the Persians[11], have not put very much into the light yet[12]:

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clearly refer to Bīšāpūr (the practice of including mints on coins was introduced in the 4th century; Walker 1956, 185-86). The form Weh-Šāhpūr found in the *Šahristānīhā ī Ērānšahr* is, thus, not likely to be correct (Markwart 1931, *Provincial Catalogue*, 14, 19; Le Strange 1905, 262; Ghirshman 1971, 14, n. 1).

[10] Cf. the following list of the main scientific contributions of the French activity: Ghirshman (1936; 1938; 1939; 1945; 1950; 1956; 1962; 1963; 1971), Ghirshman and Salles (1936), Rice, (1935) with historical note by Reitlinger, G.

[11] Cf. the following list of the main scientific contributions of the Persian activity: Sarfarāz (1348 Š./1969; 1970; 1974; 1973; 1975; 1976), Yasi (1971), Mehryar (1378/2000; 1379/2001).

[12] Among the Sasanian buildings discovered by the French (Ghirshman 1956), three are particularly worthy of attention: Building B (*ibidem*, plan II), a cruciform palace, for which Ghirshman proposed the existence of a vault over a vast court 22 m square flanked by walls articulated with filled and painted niches; more conservatively the space can be defined as an open, four *ayvān* enclosure; Building A (*ibidem,* plan II), a partially subterranean temple, built of rubble masonry faced with cut stone and roofed with beams carried on capitals with bull protomes; the discovery by Sarfarāz of a water channel leading to this building from the river (Sarfarāz 1975, 95) lends support to the idea that it was a temple devoted to Anāhīta (Herrmann 1977, 103); Building D (*ibidem*, plans II-III), a court with elaborate floor mosaics on which reclining nobles and musicians are depicted. There is no proof that stone mosaics are a western medium, though Ghirshman conceded that the artisans may have been Roman, though employed in a building by an Iranian architect. This conclusion is based on his erroneous identification of Building D as the central hall of a triple *ayvān*, thus emphasizing the Iranian contribution to the building. The mosaics, however, though probably datable to the time of Šahpūr I, are not associated with the *ayvān*

1) from the topographic to the architectural and sculptural setting and remains;
2) from the landscape to the epigraphic and historical-religious evidence etc.

In relation to this complex geo-morphological, territorial, historical area, the planned field project is going to be complex as well in a way that it could only be based on a multidisciplinary approach with different skills to be combined each other, in order to fully understand the real and multifaceted nature of the town and its related area. Many aspects of the town planning and the architecture brought up to now to the light in the area, seem not to belong to the ancient settlement tradition of Iran, and have been supposed to reflect a western tradition[13]. The town, surrounded by an irregular line of walls, was probably inhabited by 50,000 or 80,000 persons, remaining significant until the Arab invasion in the second quarter of the 7th century, becoming an active centre of Islamic culture until the 10th century[14]. Although a large amount of monuments have been identified and

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remains. The matter is clouded by the fact that Ghirshman's plans (1956, plans III-IV) are quite different from his descriptive text. Careful scrutiny of his words reveals, however, that the mosaic floor was carefully and deliberately covered over in the late Sasanian period and also partly damaged when a new wall with openings was cut into it - the supposed back wall of the central *ayvān*.

[13] Scholars have generally focused on the relations between Iran and the West, and there has been a tendency to emphasize the remains of the 3rd and 4th centuries and to ignore the subsequent history of the site, even though the archaeological record contains significant remains from the later Sasanian and early Islamic periods. The new wall of Building D was clearly part of a later colonnaded court, reminiscent of features found at Takt-e Solaymān. It carried stucco decorations in a style comparable to those at 6th-century Ctesiphon (Ghirshman 1956, figs. 41-55). Kröger (1982, 194) has dated them to the end of the 6th century or the beginning of the 7th century coins of Kosrow II (r. 590-628) were found in debris of the associated *stratum* (Walker 1956, 185-87).

[14] The remains from the Islamic period include further modifications to building D occurred in the Omayyad period. Coins found in the associated *strata* (Walker 1956, 187-91) document activity under Arab governors both before and after the Omayyad coin reforms in 692. One issue, according to John Walker, was possibly Abbasid in date. Ghirshman has acknowledged that some of the stucco decorations (1956, figs. 56-73) are related to those at Samarra; it is possible that they were forerunners of what was perhaps the earliest "Samarra style". Kröger dated them between the second half of the 7th century and the first half of

excavated there, many aspects of the town and of the surrounded area are still unknown, basically with regards to the supposed remains related to the Parthian and Elamite period. The project, thus, is aimed at implementing long-term research activities in archaeology and has been entitled "Bīšapūr and its territory". After four visits in Bīšāpūr (October and December 2010, April 2011 and April 2012) Dr. M. Amiri and myself have decided to start the field project in autumn 2012.

*Field Activities*

In November 2012 the joint Iranian/Italian team worked at the following main activities based on a landscape archaeology approach:

1) GPS survey including the activity of fixing points and the continuous topography;
2) digital documentation including the activity of collecting multimedia information on the site with digital camera and portable GPS.

The GPS survey was conducted on the whole site with the aim:

1) to perimeter the archaeological area of the site;
2) to fix strategic points;
3) to create a topographic map of the site;
4) to create a 3D Model (Digital Elevation Model) of the whole site for the analysis and reconstruction of the morphology and of the landscape of the area.

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the 8th, in the early Abbasid period preceding the construction of Samarra. Ghirshman also found other Islamic remains at Bīšāpūr (1956; 1971). Considering the importance of the city it is surprising that it does not figure as prominently in Muslim chronicles as do some less important towns. Aside from the citadel Mosque, Moqaddāsī referred to a Friday Mosque outside the city, a Mosque facing the citadel, and the Mosque of Ḵeżr also near the citadel (Schwarz 1896-1935, 31-32; Moqaddāsī 1876, 433). Outside the city walls Iranian archeologists have found material dating from the centuries leading up to the Mongol period (Yasi 1971). As for the city itself, however, already in the 10th century Moqaddāsī reported it in ruins, eclipsed by Kāzerūn (1876, 433).

The preliminary topography survey was conducted in collaboration with Dr. Mohammad Khalil Mahmoudi (Fig. 9). The initial survey focused on the south-eastern area and was carried out using a Trimble GPS 5700/5800 (Fig. 10) in PPK mode (Post Processing Kinematic)[15]; about 5000 points (Figs. 11-14) (with X, Y, Z coordinates information) have been registered in an area of about 137 hectares. This first season has been aimed at understanding the territory both in its extension and geomorphology (Fig. 15). The topographic survey will be continued in the next seasons for the entire archaeological area and the collected data will be processed at the end of the topographic survey.

The more or less 5000 points collected were turned in the most common GIS file, the shape-file, and then were used to create a TIN (Triangular Irregular Network)[16] which represents a rough morphological model of the ground surface of Bīšāpūr city.

The TIN had highlighted several issues:

1) the triangular facets of the TIN produced a very edgy shape of the morphology;
2) in some areas, the TIN did not provide an accurate representation of the real morphology of the ground due to problems inherent the retrieval of data, such as inaccessible areas[17].

The next stage of the processing will be aimed at improving the data, first through automatic functions and then by manual operations, but limited to restricted areas.

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[15] The post processed kinematic mode is a GPS in a location process whereby signals received from a mobile location receiving device stores position data that can be adjusted using corrections from a reference station after the data have been collected.

[16] A triangulated irregular network (TIN) is a digital data structure used in a geographic information system (GIS) for the representation of a surface.

[17] At this early stage of the work of processing GPS data, these are still tiny for a morphological reconstruction of the ground. However, the points collected in the south-east lend practical problems related to the acquisition of the points in the plain between the countryside and the river, where there are slopes with gradients of up to 10 m.

First of all, these operations will provide the conversion of the TIN (vector data) in a raster[18] one (GRID), consisting in a grid, or more properly a matrix, containing the values of elevation. On this type of data it will be easier to make automatic changes in order to make the best surface model.

To reach this aim the GRID's cell size will be reduced (from an original value of 5 m to that of 0.5 m) and then with a low pass filter carried out for 5 times[19].

To verify the processing a linear shape-file of the contour lines with an interval of 0.5 m will be created.

The points taken on the site must be corrected with the data of a permanent station distant not more than about 60 km from Bīšāpūr or with a geodetic point; otherwise the collected data will always have an error of about 5 m. The corrected data (DEM and contour lines) will be compared with the satellite image (GeoEye image) of the site, in order to integrate the data on the ground surface. If the results will not be satisfactory, it will be decided to carry out a manual correction of the contour lines of the drawing through GIS advanced editing functions in order to create model as close as possible to the morphological reality.

In this way it will be possible to achieve the following results:

1) Representation of the orographic surface trough contours lines with interval of 0.5 m;
2) DEM (Digital Elevation Model) of the site.

These topographic maps will be used as the baseline for the geo-referencing of the old maps also showing old excavation areas and of all features found during the survey.

A spatial database[20] in PostgresSQL (Figs. 16-19) has been created with the aim to collect the topographic data (TU) using an interface written in python[21] which can be used by desktop GIS Qgis.

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[18] In computer graphics, a raster graphics image or bitmap is a dot matrix data structure representing a generally rectangular grid of pixels, or points of color, viewable *via* a monitor, paper, or other display *medium*. Raster images are stored in image files with varying formats.

[19] Processing image in pixel.

[20] A spatial DataBase is a relational database object system that manage spatial information.

The term Topographic Unite (TU) is used to indicate an area characterized by the presence of archaeological finds on the surface, emerged as a result of agricultural work, old excavations or by any other event that leads to the surface layers of the subsoil. Each positioned element is defined as Topographical Unit (TU) and described in a specific sheet with information about the evidence, interpretation, dating, investigations, findings/diagnostic elements, bibliography.

As far as the digital documentation is concerned, on the basis of the following considerations and of the very ample territorial complexities, among which the presences of:

1) many low lying depositional areas (LLDA), mostly spreading over the western and the southern side of the city (Fig. 20);
2) modern canals (partly subterranean and partly open air) and *qanat* systems and their relation with the surrounding ancient and modern villages, like e.g. Islamabad and Imam Zade Seyyed Hossein (Sarāb-e Ardašīr Bābakān) etc.;
3) running water inside *qanats* coming both from the river and the water sources (e.g. Češmeh-ye Sāsān);
4) many dry *qanats*;
5) middle and large sized *tepe* (highly elevated depositional areas or mounds, EM) in different parts of the city (Fig. 21) even sometime covered on the top by residual and secondary deposit due to the accumulation of the soil removed during the excavation;
6) a wall system irregularly encircling the urban area (a. highly elevated mounds, made by stones and soil to south and north; b. border of the plain of the terrace above the river bed to west; c. iron fences delimiting the low wall to east) in order to identify different functional areas in the presumed peripheral sectors with regard to the central palatial and inhabited parts,

it has been decided to survey the city, starting from a specific and significant area as the one where the two celebrative columns are located, identifying different emerging archaeological remains or territorial anomalies to be located and mapped with a GPS Garmin and grouped as “Areas”.

[21] Programming language.

## List of the Evidences (Fig. 12):

Area 1 (Fig. 22)
*Location/Square*: immediately at NW of the Columns area;
*Morphology*: highly elevated sub-circular shaped sloping to the south-west side;
*Typology*: mound-like large strip of soil, with possibly residual soil of secondary activity;
*Description*: partly unexcavated soil, with one sufficiently long open section to the east, with scarce vegetation on the rather plain top; an ample vegetation area is found at NW around a very fragmented and quadrangular room; large amount of middle and big sized stone are seemingly used to contain the northern and partially the eastern sides of the area;
*Scatter of material*: low density scatter of pottery (mostly un-diagnostic and unglazed);
*House/Room*: one quadrangular room on the lower part.

Area 2 (Fig. 23)
*Location/Square*: immediately East of Area 1 and divided from this by a small size street running to west;
*Morphology*: highly elevated sub-rectangular shaped area, with possibly residual soil of secondary activity;
*Typology*: mound-like long strip of soil;
*Description*: partly unexcavated soil with one sufficiently long open section to the west, with scarce vegetation on the rather plain top, which is largely also found all around at South, and North where a large settled area is also visible with intense vegetation; a large amount of middle and big sized stones (area 3) was used to contain the eastern side of the area;
*Scatter of material*: middle density scatter of pottery, and mostly un-diagnostic and unglazed potsherds; some diagnostic and glazed potsherds are also found;
*House/Room*: many quadrangular shaped rooms at both the lower sides of the area, all around.

Area 3
*Location/Square*: immediately East of Area 2;
*Morphology*: diaphragm of middle and big sized stones between Area 2 and Area 3, used to contain both archaeological and not archaeological remains.

Area 4 (Fig. 24)
*Location/Square*: north-eastern extension of Area 3 which turns to North starting from the latter;
*Morphology*: highly elevated sub-rectangular shaped, with possibly residual soil of secondary activity;
*Typology*: mound-like strip of soil;
*Description*: partly unexcavated soil, with a large amount of vegetation on the rather plain top with potsherds and major density of small stones and/or pebbles, with presence of some pottery disks; a large amount of middle and big sized stones (area 3) used to contain the eastern side of the area. In the NE corner large quantity of middle and large sized stones are

present possibly used to contain the side of the Area. The inner western side slopes to an urbanized area where some rooms not belonging to Area 3 are located and which are not belong to the area 3;
*Scatter of material*: middle density scatter of pottery (mostly un-diagnostic and unglazed and some diagnostic and glazed);
*House/Room*: quadrangular shaped room on the lower part in the NW corner.

Area 5.1 (Fig. 25)
*Location/Square*: in the NW corner of the city, not very far from the house of the Mission;
*Morphology*: narrow mound-like strip of soil along the border of the river;
*Description*: areas with ample vegetation, there are two bench marks with cements (one is UTM 169, 3294860); edge with regular line with, on the top, small sized stones. At the side there are unsettled plain low lying depositional areas;
*Urban wall*: external city wall;
*Scatter of material*: low density scatter of pottery.

Area 5.2
*Location/Square*: in the NW corner of the city along the border of the river and very close to north to Area 5.1, not very far from the house of the Mission;
*Morphology*: narrow mound-like strip of soil;
*Description*: areas with ample vegetation, edge with regular line with, on the top, small sized stones. At the side there are unsettled plain low lying depositional areas;
*Urban wall*: external city wall;
*Scatter of material*: very low density of scatter of pottery.

Area 5.3 (1, 2, 3)
*Location/Square*: in the NW corner of the city along the border of the river and very close to north to Area 5.2, not very far from the house of the Mission;
*Morphology*: different small deposit of stony soil (secondary location of material);
*Typology*: mound-like strip of soil;
*Description*: edge with regular line with, on the top, small sized stones. At the side there are unsettled plain low lying depositional areas;
*Urban wall*: external city wall.

Area 6 (Fig. 26)
*Location/Square:* behind the house of the Mission;
*Morphology*: raised mound of soil;
*Typology*: mound-like strip of soil;
*Description*: ample vegetation;
*Urban wall*: external city wall;
*Scatter of material*: very low density scatter of pottery.

Area 7 (Fig. 27)
*Location/Square*: just behind the house of the Archaeological Mission;

*Morphology*: raised mound of soil;
*Typology*: mound-like strip of soil;
*Description*: ample vegetation;
*Urban wall*: external city wall;
*Scatter of material*: absence of pottery.

Area 8 (Fig. 28)
*Location/Square:* large extended area to north of the sasanian bridge and in correspondence of the Columns area;
*Morphology*: terraced soil with large vegetation remains, above the level of the low lying depositional area distributed over from the house of the Mission along the river;
*Typology*: delimitation of fields and gardens;
*Description:* three terraced levels with the presence of small walled lines running from west to east; at the top, more to east, some structural remains are located (small walls "A" and "B") with the first running up, more or less regularly, to the top where a quadrangular and a circular alignment of stones are remarkably located; the first level is the one of the plain low lying depositional areas; the second level goes along the probably prolongation of the small wall "A" running in a curvilinear line to the third level with the structural remains;
*Scatter of material*: very low density scatter of pottery.

Area 9 (Fig. 29)
*Location/Square*: westward of the F1 static point;
*Morphology*: a quite shallow and linear space;
*Typology*: a lower density of vegetation spots;
*Description*: a straight alignment of stones is present, turning eastwards with a 90° angle. It seems the eastern limit of a street running further, with a SE-NW axis, after trespassing a sort of crossroad. The eastern limit of the street is more detectable. Furthermore the alignment is flanked on its western side by a quite regular squared room accurately delimited by stones and whose central part presents an evident depression. The alignment is flanked on its eastern side by a circular structure; it, then eventually turns westwards with a 90° angle towards the Mosque where it forms the outer limit of a sort of a "L" shaped platform probably ending with a square room at a few meters of distance from the Mosque itself and surrounded by small, irregular and low elevated mounds probably related to the excavations;
*Scatter of material*: low concentration of pottery fragments.

Area 10 (Fig. 30)
*Location/Square*: to north-east of area 9;
*Morphology*: small quadrangular mounds: "A" and "B";
*Typology*: regularly squared in profile and low elevated (average heights about 1 meter), with a flat surface;
*Description*: at some meters of distance from the north-eastern angle of the Mosque;
*Scatter of material*: a middle-low concentration of pottery fragments.

Area 11
*Location/Square*: about 30m NE of Mound "B" of area 10;
*Morphology*: very irregular in its profile and surface;
*Typology*: mound;
*Description:* uncertain nature, with a very variable height between 0,40 and 2 m;
*Scatter of material*: a high concentration of stones but a very low concentration of pottery.

Area 12 (Fig. 31)
*Location/Square*: near the south-eastern wall of the Mosque;
*Morphology*: irregular in its profile;
*Typology*: mound;
*Description*: a shallow depression is in its centre which seems to be formed by material resulting from the excavations in the Mosque.

Area 13 (Fig. 32)
*Location/Square*: stands just on the *qibli* wall of the Mosque;
*Morphology*: irregular profile;
*Typology*: mound;
*Scatter of material*: medium-low density of ceramic fragments.

Area 14 (Fig. 33)
*Location/Square*: behind the area 13 and also on its western part, in the area where the southern wall seems to show another interruption;
*Morphology*: quadrangular shaped;
*Typology*: wide area of canalization;
*Description*: shows also traces of modern agricultural activities;
*Scatter of material*: quite high density of ceramic fragments.

Area 15 (Fig. 34)
*Location/Square*: south of area 14;
*Morphology*: quite regular and straight;
*Typology*: alignment of stones;
*Description*: seems to be interpreted as another street entering the site from south and going towards the south-western angle of the Mosque;
*Scatter of material*: quite high density of ceramic fragments.

Area 16 (Fig. 35)
*Location/Square*: against the western wall of the Mosque;
*Morphology*: elongated profile;
*Typology*: mound;
*Description*: it seems to be made up by two distinct superimposed smaller mounds (the one on top with a semicircular profile), forming a slope descending from the Mosque wall at a height of approximately 4 m to about 0,30 m to the west;

*Scatter of material*: its surface is spotted by at least three assemblages (of very uncertain interpretation) of concentric rows of stones.

Area 17 (Fig. 36)
*Location/Square*: north-eastwards of area 16;
*Morphology:* irregular in its profile, quite convex in its surface;
*Typology*: high mound;
*Description:* indication of the presence of an ancient wall (probably the eastern city wall) are at first very lightly traceable and then are clearly recognizable on the top of the Area;
*Scatter of material*: covered by a medium-high concentration of ceramic fragments (most of which diagnostic).

## *Final Considerations*

During this very limited season, the work activities of the joint Iranian/Italian team have consisted in a preliminary, though systematic and comprehensive survey of approximately the entire area of the site aimed at recognising some most noticeable landscape, geo-morphological, archaeological and architectural features. Together with the two team leaders, Bruno Genito and Mosayyeb Amiri, the survey was undertaken with the helpful presence of Giulio Maresca and Ms. Battul Khosrawi.

After a preliminary study on some of the features of the site carried out by means of a geo-referenced satellite photograph, some areas were selected to be surveyed in order to obtain a major understanding of the key-points regarding the following relationships within the ancient city between:

1) the documented excavated monumental areas and the still unexcavated surrounding spaces;
2) the numerous series of *qanats* and the extant archaeological and monumental evidences;
3) the ancient settled areas and the surrounding wide open spaces clearly detectable from the photo-satellite;
4) the unexcavated original mounds to be still detected and interpreted and the artificial mounds partially formed by the material resulting from the earlier excavation activities carried out on the site.

For these reasons, the survey was aimed at detecting any kind of morphological anomalies on the ground or at trying to trace recurrent patterns in the distribution of empty spaces (fields, gardens)[22], monumental buildings, streets, *qanats*, mounds (constructions, palaces) in various dimensions. Some interesting issues can be preliminarily emphasized amongst those related to the topographical layout of the city.

The presence of ample portions of the city area seemingly free from any kind of structural remains (e.g. Area 8) is without doubt a very noteworthy aspect, even whether the observations at this preliminary stage of research cannot represent but working hypotheses. This particular aspect easily leads one to think over the investments, the territorial and social changes occurred in the plain of the city and related to the necessary land use and water supply in order to let the area to be formed and developed as

[22] Since early times the gardens have constituted an integral part of the Persian architecture. Besides the historical sources, archaeological evidence of Achaemenid gardens exists at Pasargadae, Persepolis, Susa, and other sites (Xenophon, *Oeconomicus* 4.20-25; Arrian, *Anabasis* 5.29.4-5; Sāmī 1956, 75-77; Stronach 1978, 107-12; Pinder-Wilson 1976, 85; Yamauchi 1990, 332, and n. 55). The Achaemenid sovereigns had a particular interest in the horticulture and agriculture and seemingly greatly encouraged the agronomy, arboriculture, and irrigation (Fauth 1979; Uchitel 1997; Briant 2003). Numerous varieties of plants were introduced throughout the empire (Xenophon, *Oeconomicus* 4.8.10-12; Moynihan 1979, 11, 25); beside the practical aspects of the garden and its sensual pleasures, royal gardens also contained political, philosophical, and religious symbolism. The idea of a king creating a fertile garden out of barren land, bringing symmetry and order out of chaos, and duplicating the divine paradise on earth, constituted a powerful statement symbolizing authority, fertility, and legitimacy (Eliade 1961, 59-72; Moynihan 1979, 20; Faqīh 1991, 566; Stronach 1990, 171-80; Gignoux 1997; Panaino 2012). The great wealth required then to finance the acquisition, development, and maintenance of formal gardens, especially in the Persian arid landscape, made this type of holding a symbol of power and prosperity. From the time of the Achaemenid empire the idea of an earthly paradise spread over the literature and languages of other cultures. Although the concept of a paradise may be traced back to the Sumerian epic of Gilgamesh (Kramer 1963, 147-49), it seems that the idea existed independently in the Indo-Iranian tradition, where one may find references in the Avesta (*Yt*. 22.15), where the word *pairidaēza-*, Old Persian **paridaida-*, Median **paridaiza-* (walled-around, i.e., a walled garden), was transliterated into the Greek *paradeisoi*, then rendered into the Latin *paradisus*, and from there entering into the European languages (Yamauchi 1990, 332). The word entered Semitic languages as well: Akkadian *pardesu*, Hebrew *pardes* (*Nehemiah* 2:8; *Ecclesiastes* 2:5; *Song of Solomon* 4:13), and Arabic *ferdaws* (Koran 18.107, 23.11).

urban. The future researches will certainly give confirmation of the correctness of these hypotheses, and of the possibility that part of the urban area at Bīšāpūr was mainly devoted to agricultural and horticultural activities; this characteristic would be of extreme historical-economical importance. By now it is still difficult to assume that a portion of the city, mostly the western, remained actually ever free from buildings and from any kind of architectural features; the vicinity to the river having, however, always exposed this area to the great risk of its recurrent flooding activities. An appropriate choice to keep a large fertile riverside piece of land for agriculture and horticulture could have ensured the sufficient "urban" and "internal" water supply to be managed by the political rule. It should also be taken into due account the hypothesis that open spaces facing the river to west and others located amongst architectural buildings to north-east could have been somehow devoted to a form of pleasure and leisure for the inhabitants. Archaeological and historical evidence for this possibility at Bīšapūr are, unfortunately, poorly documented in the scientific literature; the archaeology of Sasanian period in the plateau as well, do not offer by now much evidence for that[23]; this ground of interest will be deeply investigated during the next campaigns at the site.

Of great interest, moreover, are also the evidences interpreted as traces of old streets entering the site from south (areas 9 and 15). Even though there is little indication by now regarding the period during which those streets were actually in use[24], the fact is quite significant because they provided the city with a southern access. While the presence of a road entering from north is quite unquestionable and the access from west was ensured by means of the well-known bridge trespassing the river, it is also noteworthy that during this campaigns no traces of an eastern access were identified during the survey. It is, nonetheless, possible that the *khandaq* actually bordering the eastern limit of the site was an ancient feature of the settlement. It is quite intriguing at this regard, moreover, to consider that the

[23] Little is known about the form of the Persian garden before the Islamic period, but its existence at that time and its importance as both a symbol of power and resource for pleasure is widely acknowledged (Pinder-Wilson 1976, 71-73).

[24] It is important in this regard, however, to stress that at least one of them seems to be related with the Mosque.

presence of the aforementioned *khandaq* might have "concrete" connections with the topography of the site, and especially with the steep slope of the hill where the so-called "Qal'e-ye Dokhtar" lies. One cannot exclude that this *khandaq* could have been a feature located at the eastern limit of the city as a sort of "barrier" protecting the site from any possible alluvial deposits flowing down from the northern hills (Fig. 37). The most destructive effect for the urban landscape and the city were, nonetheless, the documented continuous floods still now occurring every 50 years circa[25], and which have consistently corroded the same embankment and deviated the course of the river as well.

[25] Personal communication by Dr. Mosayyeb Amiri.

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# FIGURES


Fig. 1 - The Bīšapūr area with the main geographical and archaeological sites of Nurabad, Bīšapūr, Kazerun, and the Arzhan and Perishan lakes, from Google-earth 2010, revised by the authors

Fig. 2 - Rock-Relief: Scene of investiture of Šahpūr I on the left bank of the river (the earliest), by the authors

Fig. 3 - Rock-Relief: Triumph of Šahpūr I on the right bank of the river (by the authors)

Fig. 4 - Rock-Relief: The victory of Šahpūr I, on the left bank of the River (by the authors)

Fig. 5 - Rock-Relief: The Investiture of Bahrām I, with inscription of Narseh, on the right bank of the river (by the authors)

Fig. 6 - Rock-Relief: Bahrām II (r. 274-93) mounted receives the submission of a party of Arabs on foot before him on the right bank of the river (by the authors)

Fig. 7 - Rock-Relief: Šahpūr II seated frontally on a throne while in the registers to the side various trophies are presented to him on the right bank of the river (by the authors)

Fig. 8 - Šahpūr statue in the Cave, after MAI (by the authors)

Fig. 9 - Dr. Enzo Cocca and Dr. Mohammad Khalil Mahmoudi on the field, after MAI


Fig. 10 - GPS base Trimble 5700/5800, after MAI

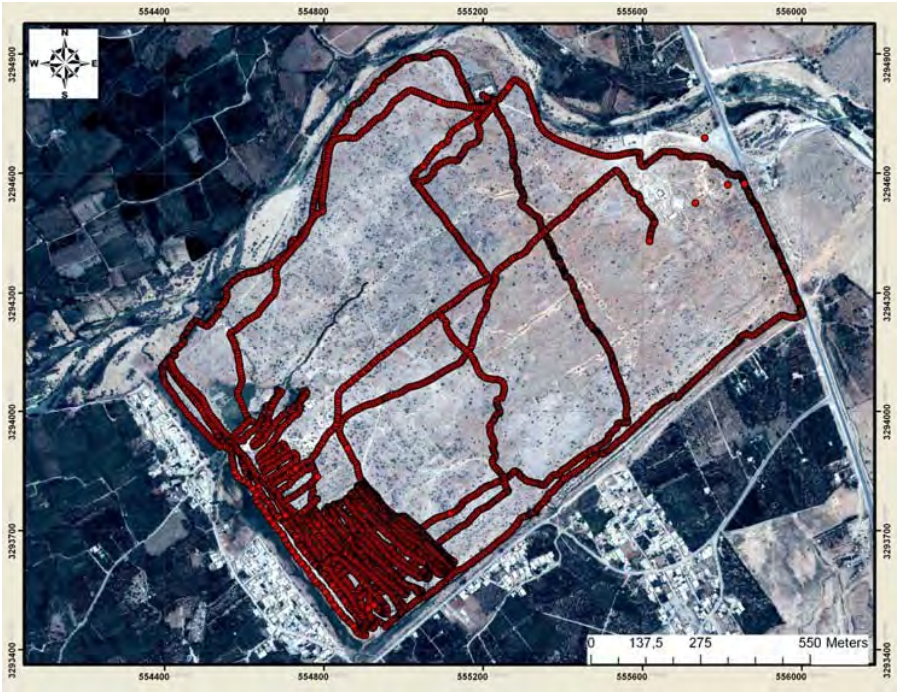


Fig. 11 - Satellite Image of Bīšapūr site: points distribution of GPS survey in PPK mode, after MAI

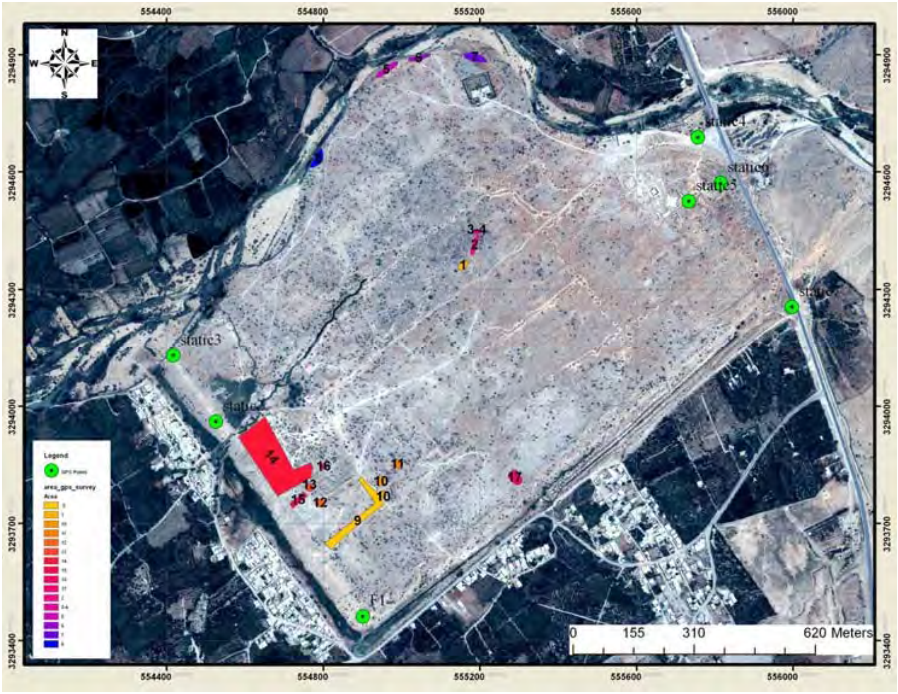


Fig. 12 - The different areas of archaeological evidences from 1 to 17 and the GPS fixed strategic point, after MAI

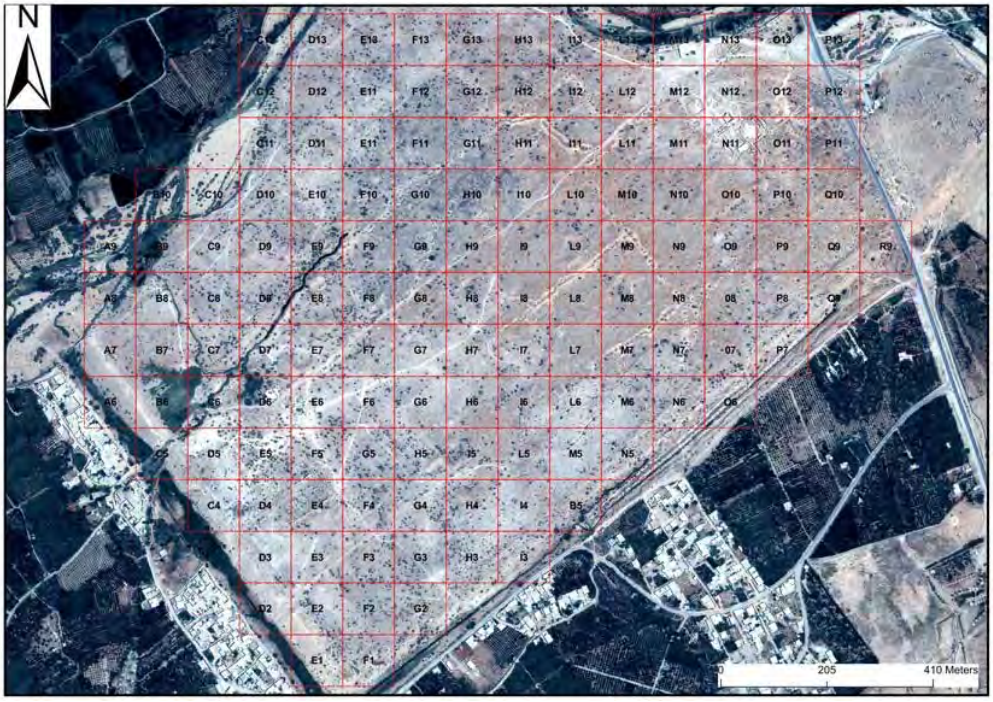


Fig. 13 - Satellite Image of Bīšapūr site with virtual grid 100 × 100 m, after MAI


Fig. 14 - Satellite Image of Bīšapūr site with the overlap of the old archaeological map, after MAI

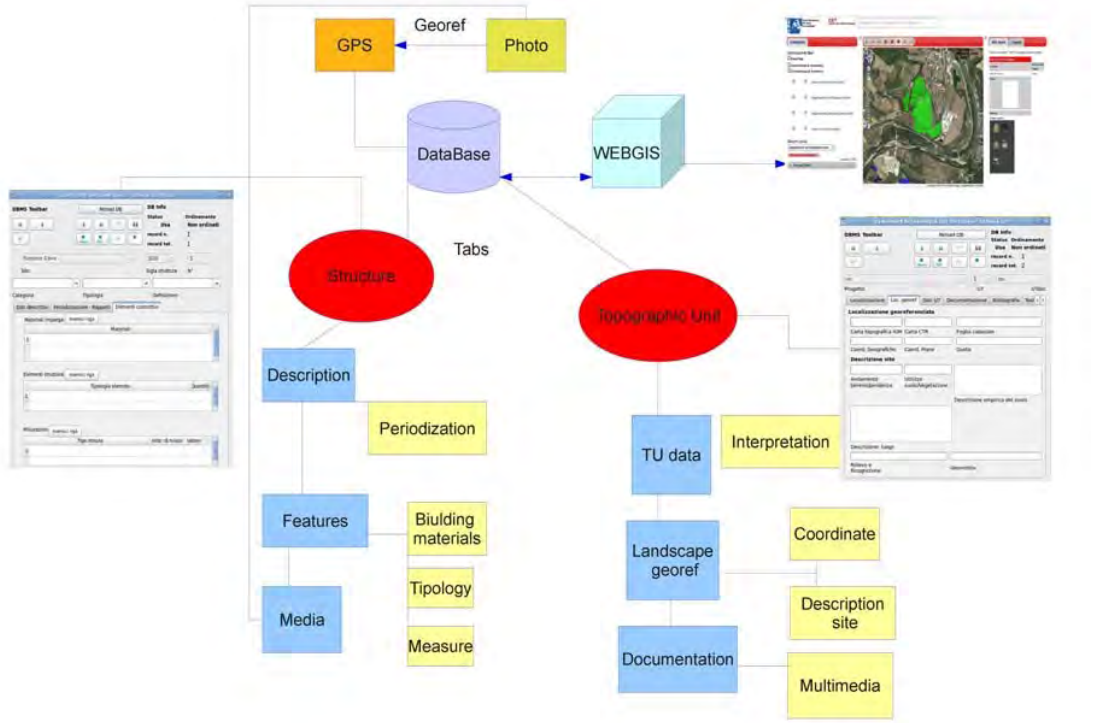


Fig 15 - Schematic diagram of the field activity of GPS survey, by E. Cocca

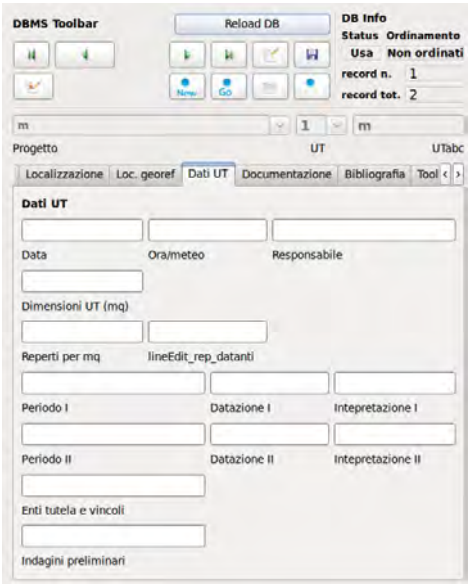


Fig. 16 - Example of UT form of localization, by E. Cocca

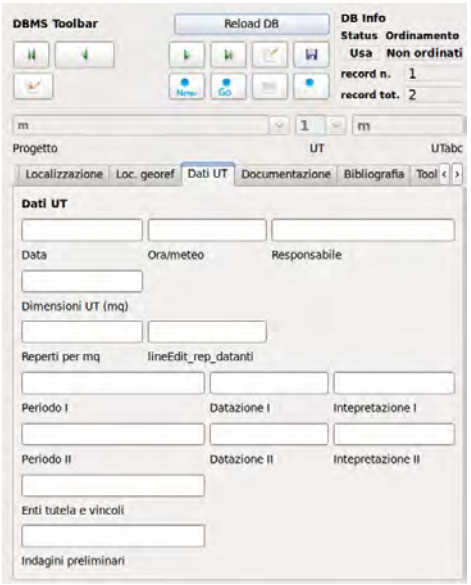


Fig. 17 - Example of UT form of documentation, by E. Cocca

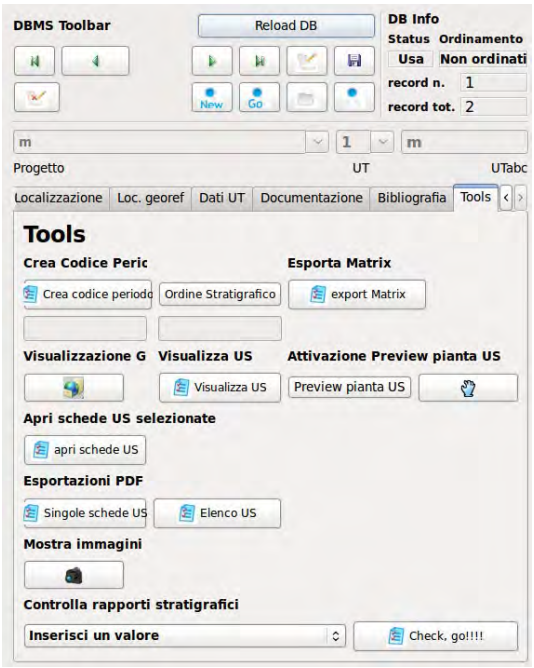


Fig. 18 - Example of UT form of GIS tools by E. Cocca

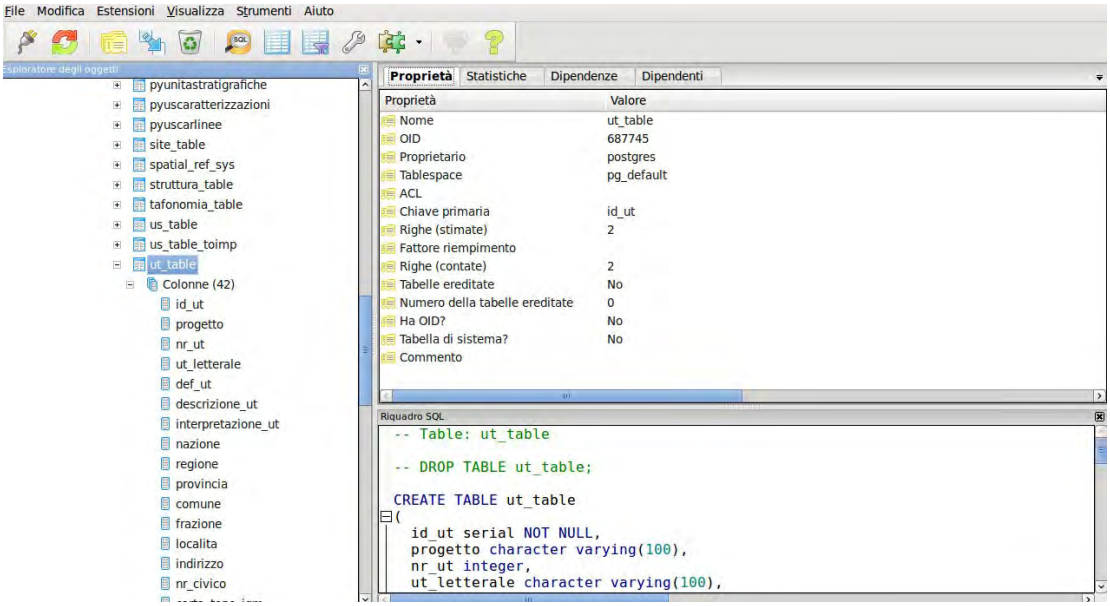


Fig. 19 - Database schema, by E. Cocca

Fig. 20 - Low lying depositional area in the central part of the city, west of the Columns area, after MAI

Fig. 21 - A tepe in the urban area to south east, after MAI

Fig. 22 - Area 1 at East of the Columns, after MAI

Fig. 23 - Area 2 at north of the Columns, after MAI

Fig. 24 - Area 4 at east of the Columns, after MAI

Fig. 25 - Area 5.1 at north-west corner of the city, after MAI

Fig. 26 - Area 6 at the north-west side of the city, after MAI

Fig. 27 - Area 7 at the north-west side of the city, after MAI

Fig. 28 - Area 8 at east side of the Sasanian bridge, after MAI

Fig. 29 - Area 9, traces of a probably ancient street entering the site from south and then going towards the Mosque, after MAI

Fig. 30 - Area 10, two low elevated squared mounds west to the Mosque, after MAI

Fig. 31 - Area 12, mound near the south-eastern wall of the Mosque, after MAI

Fig. 32 - Area 13, mound which stands in front of the *qibli* wall of the Mosque, after MAI

Fig. 33 - Area 14, wide area of canalization with traces of modern agricultural activities located north-west to the Mosque, after MAI

Fig. 34 - Area 15, alignment of stones possibly to be interpreted as the limit of another street entering the site from south and going towards the south-western angle of the Mosque, after MAI

Fig. 35 - Area 16, mound insisting against the western wall of the Mosque, after MAI

Fig. 36 - Area 17, mound with probable traces of the eastern city wall in the area of the site utilised in modern times as a private agricultural field, after MAI

Fig. 37 - Panoramic view from the hill where the "Qal'e-ye Dokhtar" lies. Quite evident the connection between the steep slope (in the foreground) and the *khandaq* at the eastern edge of the city (in the background), after MAI