1st YEAR:

Work on the field:

Topographic surveys of the entire archaeological site

Building of the topographic grid

Geo-referencing of the main structures: Complex of St. Stephen and Bishop Sergius, Tower Complex, *the* perimeter wall enclosing the *castrum*

Photogrammetric survey of the mosaic pavements of the churches of St. Stephen and Bishop Sergius

Photogrammetric survey of the walls of the churches of St. Stephen and Bishop Sergius

Geophysical prospections (GPR survey) of the mosaic pavements and of the churches surrounding areas

Laser scanner survey of the ecclesiastical Complex of St. Stephen and Bishop Sergius

Office Work during the following 10 months:

Implementation of a GIS for the mosaic pavements of the Churches of St. Stephen and Bishop Sergius aimed to document the amount of erosion and disarray of the surface and to locate them in their spatial distribution

Orthophotographs of the walls surfaces and of the mosaics

Starting up of a Permanent Advanced Training school for the "High Technologies for the Cultural Heritage" and for "Capacity building in the field of Education and Communication of Cultural Heritage" through e-learning platform

2nd YEAR:

Work on the field:

Analysis and recording of the wall stratigraphy of the complex of St. Stephen and Bishop Sergius, on wall sheets (USM)

Analysis and recording of the wall stratigraphy of the visible portions of walls of the site, on wall sheets (USM)

Photogrammetric and laser scanner survey of the Tower Complex, 3D model and rendering

Recording and study of the archaeological findings from the previously carried out excavations

Implementation of the Permanent Advanced Training school for the "High Technologies for the Cultural Heritage" and for "Capacity building in the field of Education and Communication of Cultural Heritage" through e-learning platform

Office Work for the following 10 months:

Database recording of the wall sheets (USM)

Study of the archaeological findings from the previously carried out excavations

3rd YEAR:

Recording and study of the archaeological findings from the previously carried out excavations

Organization of a permanent exhibition regarding the elaboration carried out on the site

Designing of tourist/visitors itineraries equipped with suitable informative posters

Realization of a multimedia post for a synchronic and diachronic virtual tour of the site

Implementation of the permanent advanced training school for the "High Technologies for the Cultural Heritage" and for "Capacity building in the field of Education and Communication of Cultural Heritage" through e-learning platform

Website designing for data dissemination regarding the KASTRUM Project and the archaeological site

ADDENDUM:

Permanent advanced training school for the "High Technologies for the Cultural Heritage" and for "Capacity building in the field of Education and Communication of Cultural Heritage" through e-learning platform

The CNR-IC (Institute of Crystallography, Smart eLAB team) realized reliable and highly performing technological infrastructures for distance education, for science dissemination and for the valorization of the scientific research results (CNR Minerva Project http://minerva.mlib.cnr.it/ and http://calliope.mlib.cnr.it/index.php?journal=Smart_eLab&page=article&op=view&path%5B%5D=3&path%5B%5D=4). This technological infrastructure supports several websites specialized in e-learning and web publishing both for the CNR institutes and for several schools or academic institutions (http://calliope.mlib.cnr.it http://romaforma.mlib.cnr.it http://puentes.mlib.cnr.it http://peano.mlib.cnr.it).

These distance learning systems are based on the moodle platform (....https://moodle.org/?lang=en) which is one the most reliable and widespread learning software largely used in different contexts to create personalized learning environments. The moodle platform is freely provided as an open source software which is supported by an international team and it is not limited by any operative system or hardware. The

software is extremely flexible, it is translated in more than 120 languages and can be installed on a single pc or on networks of servers depending on the needs or on the numbers of users. Moodle is based on the pedagogic principles of the "social constructionism" (https://docs.moodle.org/27/en/Pedagogy) and, thanks to the simple web interface which makes the platform easy to use, both teachers and learners are involved in the organization of the courses and of the educational material. The software allows teachers to build virtual classrooms. Users are not required to have any specific knowledge of programming languages other than computer basics.

The Moodle interface is easy to navigate on both desktop and mobile devices (pc, tablets, smartphones) and courses, classes, eBooks, forums, wikis, glossaries, database activities are always available online.

The Italian team will be responsible for the training of specialists in new technologies for the cultural heritage and in computer technologies for the valorization of cultural heritage. The courses given by the Italian team will be addressed to students and/or prospective teachers and scholars.

The courses will be firstly prepared in Italian and English, than they will be translated in Arabic

Scheduled activities for the Permanent advanced training school

1st year:

- pre-feasibility of the project:

drawing up of the subject-matters (website, virtual museum and/or exhibition, technologies for cultural heritage, etc...) and of the target learners

specialized training of the members of the Italian team on the distance education system

preparation of the materials for the courses (tests, lessons, e-books, forum, videos, etc...)

implementation and starting up of the courses

- evaluation and planning of the IT infrastructure in situ (internet connection, intranet connection, wifi, etc...) and evaluation of the equipment for the data acquiring and for the following uploading on the platform (cameras, disks, memories, etc..)

N.B.: this stage of work is subordinated to a financial support from EU and/or from other international bodies

- cooperation and partnership with Jordanian partners for future courses and/or for joint didactic efforts

- establishing of a Jordanian working group addressed to the assessment of the impact of the information and communication technologies on the fruition of the site (enhancement of the awareness about the archaeological site, making available information for visitors, design of assessment grids) for developing future strategies of dissemination of information and tourism marketing and site management

2nd year:

- setting up of the infrastructures

- training of the technical staff in Jordan (by CNR smart eLab staff) and recruitment of some Jordanian members to be trained at CNR in Italy

- recruitment of the future (prospective) teachers (Jordanian targets) to be trained through the e-learning courses

-starting up of the courses and production of didactic contents and resources

- evaluation of the state of project and recruitment of the future platform managers (administrators) and/or courses makers (creators) (Jordanian team)

3rd year:

- creation of new courses and/or updating of the existing contents by the Italian and Jordanian trained (II year) team and assessment of the impact on the archaeological site

- training at CNR (Italy) for e-learning courses designers (makers, creators) and managers of the IT educational infrastructure

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1°N.B.: all the hardware installations in situ are conditional on obtaining an EU and/or international institutions funding or financial support. For the Jordanian selected participants (to a maximum of 5 people) for the training courses to be held in Italy, the CNR will offer exclusively the guesthouse located inside the campus in Montelibretti (Rome)

2°N.B.:

Low flying aerial photography shootings of the whole site area with gas balloon or drone are conditional on obtaining all the needed authorizations by the Jordan Security

Dr.Roberto Gabrielli