Research Programm

The DIGIBARCHI project is aimed at allowing the scientific community to get a better access to cuneiform tablets belonging to Old Babylonian archives, thanks to the building-up of a repertory of digital images and their integration into a database combining a catalog with electronic editions of the texts; this database, freely accessible on the web, allows both multi-criteria searches on the content of the documents *and* the visualisation of the written media.

1. PUBLICATION OF BABYLONIAN TABLETS: STATE OF THE ART AND NEEDS

The edition of Babylonian tablets generally consists in a transliteration of the cuneiform documents, most often with a translation and notes, but not always with a reproduction of the original. Conversely, it happens that a publication is limited to a picture of the tablet, without any edition of its text.

1.1. The problems of hand copies

Cuneiform script was mainly used on clay tablets (Charpin 2010b, chap. 1). For a long time, the tradition in Assyriology was to make hand copies of the cuneiform texts. These drawings were more or less true to the originals (shape of signs, layout, etc.); some cases have been evidenced, where such "copies" actually were disguised transliterations (Charpin 2010b, p. 28 and p. 142 n. 37). Even if some copists made a remarkable work since the beginning of Assyriology, drawing as such can only partially reproduce the features of the original, thus imposing severe limitations to the diplomatic study of the documents (Charpin 2002). The main advantage of hand copies was to reduce printing costs, the reproduction of drawings being much cheaper than that of photos.



Fig. 1. Hand copy by G. Dossin ARM 1 25 (TCL 22, 1946): slightly normalized signs, ruled lines, form of the tablet not indicated.

The great series of publications of the main museums are thus mainly composed of plates reproducing hand copies of the tablets, often accompanied by a catalog and, at best, by indexes; they never include editions of the texts. Such is the case of the *Cuneiform Texts* series (CT) of the British Museum (since 1896), the *Vorderasiatische Schriftdenkmäler* (VS) of the Vorderasiatisches Museum of Berlin (since 1907), the *Textes cunéiformes du Louvre* (TCL) of the Louvre Museum (since 1910), the *Yale Oriental Series* (YOS) and the *Babylonian inscriptions in the collection of James B. Nies, Yale University* (BIN) of the Yale

Babylonian Collection (since 1915 and 1917), the BE and PBS series of the Babylonian Collection, University Museum, Philadelphia (since 1893 and 1911), the *Oxford Editions of Cuneiform Texts* (OECT) of the Ashmolean Museum of Oxford (since 1923), etc. Most of these series are still living today (BIN, OECT, VS, YOS): their publication standards are unchanged (cf. Charpin 2007, p. 147).

1.2. New ways: photographs

The debate between hand copies and photographs was not only based on economic criteria. In the foreword of ARM 26/1, J.-M. Durand asked:

"Que valent, d'une façon plus générale, des copies cunéiformes ? Je sais par expérience qu'on ne copie que ce que l'on voit et que la 'main absolue' ou l''œil absolu' n'existent pas, si ce n'est dans la jubilation naïve d'un débutant. Un texte paléo-babylonien a des valeurs syllabiques le plus souvent univoques ; s'il n'est pas compris, il est donc ipso facto mal copié. On peut certes reconnaître plus dans une copie maladroite que dans une succession de x x x ou de o o o, mais l'autographie devrait, la plupart des cas, être refaite après découverte de la solution. D'autre part, celui qui fait des autographies trop fidèles, se voit taxé d'illisibilité ; par contre, ce que mon expérience m'a prouvé surabondamment, c'est que celui qui normalise, fait une œuvre claire et élégante, certes, mais inutile et qui ne sert surtout qu'en cas d'erreur d'impression (tá pour tà)." (Durand 1988, p. x)



Fig. 2. Hand copy of the Mari letter A.2962 (J.-M. Durand, FM 1 p. 48).

As concerns the Mari archives, discovered between 1934 and 1938 and which form more than a quarter of the corpus of Old Babylonian archives, a photographic coverage was made as of 1982. The goal was to allow a checking of the published texts without being obliged to go to Syria – one had no idea then of the tragic forthcoming political developments. Moreover, these photos were thought as a safeguard against a possible degradation of the tablets. To meet these requirements, one needed photographs of an excellent quality. The technology recommended by D. Owen was adopted: spraying of ammonium chloride at the surface of the tablets (Owen 1976, p. 14 et p. 32 n. 21). This is a painstaking work, since each surface of the tablet has to be prepared before being photographed and a minimum of 6 photographs for each tablet is needed (obverse, reverse and 4 edges). But this technique has the advantage of producing images with a high level of contrast between the surface of the tablet, where the fine white powder is deposited, and the bottom of the signs, where it is not, which greatly improves readability.



Fig. 3. Photo (after vaporization of ammonium chloride) of the Mari letter A.2962 (FM 5 5).

For years, photographs were taken with a traditional medium format camera (6x7 cm). Negative films are presently kept in a fire-proof safe (fig. 4 and 5). From 1999 on, a high definition digital camera has been used, either in Paris as for the tablets kept there until 2004, or more and more often in the museum of Der ez-Zor, where the whole collection has been ultimately gathered.





Fig. 4. Fire-proof safe where the ring-binders containing the negative films are kept.





Fig. 5. Ring-binders where negative films of the Mari tablets are kept.

Traditionally, the publication of the Mari texts was accompanied with hand copies. From the 1980s onwards, publications have been more and more accompanied with photographs. Images in microfiche format were produced first, a technique that appeared as an excellent solution at the time (Stone & Zimanski 1976, ARM 26/1 [Durand 1988], ARM 26/2 [Charpin et al. 1988], ARM 27 [Birot 1993]). Nevertheless, the pictures lost quality and the microfiche reader was quite an expensive and bulky device.

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Fig. 6. Microfiche reproducing photographs of Mari tablets (ARM 26/1).

The cost of printing photographs in books or journals, for a long time prohibitively expensive, was no more a problem when computer-assisted publishing became common practice (ARM 28 [Kupper 1998], FM series [*Florilegium Marianum*, 1992-]). A serious limitation still exists: the impossibility to modify the size or the characteristics of the printed images (luminosity, contrast, etc.).

A project was launched at UCLA in the early 2000's: CDLI (Cuneiform Digital Library Initiative, cf. http://www.cdli.ucla.edu/); its goal was basically to make available on the web photographs of all cuneiform tablets kept around the world. That was a revolutionary undertaking at the time, but the scanning technique employed often gives images of insufficent allow decipherment collation quality to or of the tablets (http://cdli.ox.ac.uk/wiki/doku.php?id=submission guidelines). Moreover, the project as such aims at heritage preservation more than at scientific research. Furthermore, some important museums or collections (like Yale) did not want to participate in the project, preferring to retain control over the pictures of the objets they kept. CDLI digitized some collections in Syria (for instance, the tablets from Tuttul [Ragga museum]), but not the more important ones (Mari [Der ez-Zor museum], Ugarit [Damas and Lattaquiah museums] or Emar [Aleppo museum]).

1.3. Editions and research tools

As the number of texts increased, the frequent absence of editions accompanying their publication became a growing concern. Some happy exceptions are to be noted, especially for texts deriving from regular excavations. An excellent initiative was taken by the archaeologist of Mari, André Parrot, and his chief-epigrapher, Georges Dossin: alongside the volumes where hand copies were published (*Textes Cunéiformes du Louvre* series), they published volumes where the texts were transliterated and translated (*Archives Royales de Mari* series, as of 1950). But other important archaeological missions did not follow this innovation, still imitating the old habits of museums: thus, the archives found at Ur were published in UET 5 only as hand copies, a catalogue and indexes (Figulla et Martin 1953).

However, even in the best cases, the situation is far from being good for different reasons:

- editions are often outdated, suggestions (often in reviews), collations, etc. having been made after the publication in a dispersed manner;

- consulting indexes is more and more cumbersome, as the number of books in a series grows; moreover, these indexes are generally limited to proper names, so that the vocabulary is nowhere indexed;

- finally, even when we are dealing with regular excavations, a number of texts are published outside series (in journals, conference proceedings, *Festschrift*, etc.), and have never been indexed. The scattering of editions is often even worse as for texts not deriving from regular excavations.

2. THE FUTURE: ONLINE INTEGRATED EDITIONS AND IMAGES

2.1. Electronic editions

In the mainstream of what is now called "Digital Humanities", a database named ARCHIBAB has been set up in the frame of the call for projects "Corpus and research tools in Human Sciences" of the French ANR (*Agence Nationale de la Recherche*); the project was funded between 2008 and 2010, and again from 2011 to 2014 under the "white" programs. It goes on with the means granted by the Collège de France to the chair "Civilisation mésopotamienne". Its purpose is to study Babylonian archival documents written in the first half of the second millennium BC, consisting in letters, legal texts and administrative documents. The corpus, amounting to 32.500 published tablets (not counting thousands of unpublished ones), originates from more than 50 sites, above all in Iraq and Syria, but also in Iran, Turkey and Israel, and kept in about one hundred public or private collections (for more details, see Charpin 2010b, Charpin 2014a and 2014b; <u>http://www.digitorient.com/?page_id=872</u>).

The ARCHIBAB database allows multicriteria searches giving access to the content of the texts, their context being taken into account. After 7 years of work, the database includes ca. 4.500 bibliographical files, registrating 32.500 published texts. The TEXTS table includes 17.444 files (53% of the corpus). Among them, 10.541 texts are transliterated, and 6.578 even lemmatized. The lines of transliterations amount to 190.361 files (text length is between 1 and more than 100 lines, with an average of 20).

The work is already significant; since 2008, it has been possible to keep up with the new publications (ca. 500 new texts per year!). As concerns retrospective treatment, one third of the corpus has been included.

2.2. Integration of pictures

Initially, the ARCHIBAB database had other priorities than the integration of images of the texts. But it appeared rather soon that this was necessary in order to check the editions, identify the archives to which tablets belonged, or date the tablets (when the date was not preserved or written) thanks to paleography and layout. For practical reasons, it has been



chosen to outsource these images instead of inserting them within the database: thanks to a URL, the user can display the image of the document in his/her web browser or download them, independently from the edition of the text. It also allows to redirect to already existing collections, as well as to our own directory (called "Archipix") and to keep open the possibility to save and use images in any format (.jpg, .tif, .pdf, etc.), and even, in the future, in formats which do not yet exist.

2.3. The future: 3D scans

When reproducing images of texts written in cuneiform script, the major obstacle to overcome is the tri-dimensional nature of the clay tablet: neither the copies nor the traditional photographs can solve the problem.

An original solution has been developed at the same time by the Oriental Institute of the University of Chicago (<u>http://news.uchicago.edu/article/2009/10/14/technology-brings-new-insights-ancient-language</u>) and in the University of Leuven (cf. Hameeuw & Willems 2011 and <u>https://www.propylaeum.de/altorientalistik/themenportale/leuven-camera-dome-system/</u>). This technology called "Camera Dome System" consists in the association of a digital camera with a dome in which numerous LEDs are lightened in turn and pictures are taken as light comes from all around the object. The pictures are then processed with a software in order to produce a combined view of the object, on which the user is able to virtually change the lighting direction and shadow. The results are very good, but this is only improved 2D (2D+).

Some tests with real 3D scanners have already been made (see for instance <u>http://creativemachines.cornell.edu/cuneiform</u> or <u>http://graphics.stanford.edu/papers/cuneiform/cuneiform-300dpi-images.pdf</u>). Nowadays, this kind of equipment is rather affordable. The main problem is the time needed to aquire and process such 3D digital images. Till now, no assyriological database has ever given access to such images.

3. A 24 MONTH PROJECT

The DIGIBARCHI project has been designed to make two operations possible within 24 months: the integration in the ARCHIBAB database of more texts and of thousands of digital photos from the Mari royal archives on the one hand, the 3D capture and dissemination on the Web of the tablets from the collection of the EPHE on the other hand.

3.1. Institutional context

First of all, let us describe the institutional context of the DIGIBARCHI project: it unites two member institutions of PSL, within an extended network of international cooperations.

Two partners of PSL

At the Collège de France, the research is carried out by the chair "*Civilisation mésopotamienne*", with two permanent people: a Professor (D. Charpin) and a Researcher (A. Jacquet), as well as an assistant (B. Fiette, "ATER" for 2014-15, renewable for 2015-16).

At the École Pratique des Hautes Études, two chairs are involved, those of M. Guichard ("*Histoire et philologie de la Mésopotamie*") and of S. Démare-Lafont ("*Droits du Proche-Orient ancien*"), as well as the "*charge de conférences*" of L. Marti (CR, CNRS, UMR 7192), with the help of D. Stöckl Ben Ezra, *Directeur d'études chargé de mission en Humanités numériques*. The project also involves two students preparing their PhD at the doctoral school of the EPHE under the supervision of D. Charpin: F. Nebiolo and M. Béranger.

A network of research

Researches on Babylonian archives which are the object of the DIGIBARCHI project are undertaken within the CNRS unit UMR 7192 directed by Thomas Römer, Professeur at Collège de France. They are carried out in collaboration with other projects in France, Germany, Russia and the USA:

- "Comptabab" PICS project of the CNRS, devoted to accounting practices in Mesopotamia, especially in the first half of second millennium BC, and therefore relying on the ARCHIBAB database. This project brings together UMR 7192 (N. Ziegler, DR CNRS, Paris), the *Université de Bretagne Occidentale* (G. Chambon, MC HdR, Brest) and the Russian Academy of Sciences (I. Arkhipov, Moscow); see <u>http://www.digitorient.com/?p=2339</u>;

- the ANR/DFG project TEXTELSEM (direction N. Ziegler [CNRS, Paris] and E. Cancik-Kirschbaum [FU Berlin]; <u>http://www.digitorient.com/?page_id=2348</u>). This project is devoted to historical geography of Northern Mesopotamia in the second millennium BC, and relies on the ARCHIBAB database, which it helps enrich its data;

- the DOC project directed by S. Démare-Lafont (<u>http://d-o-c.fr</u> soon avaible), presenting formularies of Mesopotamian contracts through juridic categories and historical periods (including the Old Babylonian period).

The DIGIBARCHI project will also benefit from ties with:

- FU Berlin: Prof. em. J. Renger communicated thousands of transliterations of legal and administrative texts from central and southern Iraq, prepared in the frame of his former project ABRFU (<u>http://www.archibab.fr/corpus_berlin.pdf</u>);

– Philipp University of Marburg: Prof. W. Sommerfeld and P.D. R. Pientka also communicated numerous transliterations for integration in the ARCHIBAB database;

– Yale University: A. Jacquet has been entrusted with the publication of a book including nearly 200 unpublished Old Babylonian tablets kept in the Nies Babylonian Collection. D. Charpin will also publish 37 contracts from Isin, and, together with N. Ziegler, the archives of Gimillum (60 texts).

3.2. Digital images of Mari tablets online

More than a quarter of the Old Babylonian tablets published today belong to the archives discovered in the palace of Mari (8.952 out of 32.500). These documents, discovered in Syria before World War II, were then brought to Paris for study; they had to be brought back to Syria as and when they would be published, but in 1995 the Direction of Antiquities of Syria requested that all the tablets remaining unpublished join the new museum built at Der ez-Zor. According to the timetable then determined, the last tablets have been sent back in 2004. All the tablets have been duly photographed: pictures taken before 1999 are traditional photo negatives (6x7 cm), the rest are digital photos (TIFF format).

What is needed is:

1- digitizing the negatives (3500 films "120" medium format, 10 photos each);

2– processing the digital images (either from the digitization of negatives or from already existing digital photos): capture of metadata (inventory and/or publication numbers); montage of photos for each tablet (obverse, reverse, edges: an average of 6 pictures per tablet);

3- for the already published texts: integration of the digital images in the web database. It has already been done for 12% of the texts (see for instance http://pix.archibab.fr/4Dcgi/16786V1978.jpg).

Operation 1 may be carried out by a company specialized in negative digitizing; operations 2 and 3 should be undertaken by students or postdoc (*vacataires* or *contractuels en CDD* according to the French administrative categories). Indeed, operation 2 has to be done by competent assyriologists, able to read tablets rapidly (to check the references: errors in the past have been inevitable, given the number of pictures to be taken), to process images

properly to get optimal readability (luminosity, contrast, etc.), and to assemble the photos for each tablet. Less advanced students could achieve Operation 3.

This is all the more urgent that we have serious concerns about the collection kept in the museum of Der ez-Zor, the building being situated just on the border between the loyalist army and Daesh (ISIS) troops. The tablets were allegedly removed from there before summer 2014 and brought to Damascus "in a safe place", but it has been impossible till now to get more precise informations. It would thus be extremely important to make the collection of pictures assembled for many years in France and in Syria more conveniently available and (for published texts) in open access. It is unnecessary to recall here the catastrophes which happened in the Iraqi museums (Bagdad in 2003, Mossul very recently). It is the responsibility of the teams hosted in Syria as well as in Iraq to make available to the whole scientific community these archives, which are among the oldest of the human history. A first grant of 4.000 € has been allocated by PSL for 2015, in the frame of the call for expressions of interest "*Arts et Humanités numériques*" of december 2013 and has already been fruitful. We need this help to be significantly amplified, given the huge amount of photographs still to be processed.

More precisely, here is a list of concerned the corpora within the Mari archives, in the two complementary collections of ARM (*Archives Royales de Mari*) and FM (*Florilegium marianum*):

Administrative texts:

Among the administrative texts, the most recently published ones have been completely integrated in the database (texts and pictures): FM 12 (Jacquet 2010), ARM 32 (Arkhipov 2012). But this is not the case for the previously published volumes. Some have only been catalogued: FM 10 (Marti 2008: 89 texts, 76 printed photos) and FM 11 (Chambon 2009: 190 texts, 169 printed photos). In the ARM series, texts of volumes 21 (Durand 1983), 22 (Kupper 1983), 23 (Bardet et al. 1984) and 30 (Durand 2009) are partially included, pictures very rarely; as for volume 31 (Guichard 2005), the photos have been integrated, but not the texts.

All this is not a purely mechanical work, since it often provides the opportunity to improve significantly the earlier printed editions. Moreover, the lemmatization, although done in a nearly automatic way, requires human intervention each time a new item is encountered: the person who enters the text must provide a correct analysis of the word or name, which will be recorded and used thereafter by the program.

We also have to go back further in time, by providing new electronic editions updating the obsolete ones from the older volumes (especially ARM 7 [Bottéro 1957] and ARM 9 [Birot 1960]), with the help of the collations published in a dispersed manner.

Finally, we have to go on with the publication of new texts: the next planned volume of administrative texts is being prepared by Lionel Marti (ca. 100 texts relating to the management of stocks of meat, to be published in the *FM* series). *Letters:*

The transliterations of all the letters discovered at Mari and published till now (2.553) are already accessible on the ARCHIBAB website, but this is far from being the case for their pictures: only 220 photos of letters (8,5%) are today available. The situation should improve, thanks to the first grant of PSL, which will very soon allow access to the 550 letters published in ARM 26/1 and 26/2, but then only 30% of the corpus will be available. A significant effort is still to be done.

We also have to go on publishing new texts: the next volumes planned in the *ARM* series will be devoted to the correspondence of Itur-Asdu (M. Guichard) and to that of Išme-Dagan (N. Ziegler). In the final phase of preparation of these volumes, texts and images will be included in the ARCHIBAB database, as it has been done with the most recently published

administrative texts (FM 12 and ARM 32): web users will get access to them as soon as the books are published.

3.3.3D capture of tablets

History of the collection of tablets of EPHE

The Section des Sciences Historiques et Philologiques of EPHE keeps a collection of ca. 500 cuneiform tablets. This collection was built up by F. V. Scheil between 1910 and 1914; he published its catalogue in 1932/33, when the collection had 361 inventory numbers (Scheil 1932/33). Most of the tablets had been published by Scheil himself and former students of his (Contenau 1915, Boyer 1928). After 1932, the collection was increased in a less documented manner. A new catalogue, including hand copies of most of the unpublished pieces, has been published by J.-M. Durand (1982).

This collection is remarkable by its diversity, which was intended by Scheil, given the pedagogic concerns he had in mind when buying the tablets. First, chronological diversity: the most ancient tablets go back to the IIIrd millennium BC (presargonic period), the most recent ones belong to the achaemenid period (middle of 1st millennium BC), most of them, however, dating from the so-called Ur III period (XXIst century BC). Secondly, geographical diversity: the collection includes tablets from south Iraq (Tello, Larsa, Umma), but also from central Iraq (Sippar, Kiš) and from the north (Aššur). Finally, typological diversity: archival documents prevail, but there are also literary texts, like a manuscript of the legend of the Atrahasis, the "Babylonian Noah" (Groneberg 1991), royal inscriptions, etc.

Integration of the Old Babylonian tablets in the ARCHIBAB database

The collection of EPHE includes about one hundred Old Babylonian tablets, which must be integrated into the ARCHIBAB database:

- Boyer 1928: 50 texts (hand copies and commented edition);

- Durand 1982: 49 supplementary texts (catalogue, hand copies, and indexes; no edition).

All of them must be made accessible through an electronic edition (re-edition of texts duly corrected in the case of Boyer 1928).

A better featured patrimony

The digital capture of the tablets of this collection will be made possible by the recent ("NextEngine", acquisition of 3D scanner by EPHE а see https://www.youtube.com/watch?v=x9F7Ai5tuNQ), the same model having already been Louvre Museum the digitization Greek used bv the for of ceramics [http://www.nextengine.com/company/news/louvre]). To make acquisition faster and of higher quality, an additional software ("ScanStudio HD PRO") has to be bought (http://www.nextengine.com/products/scanstudio-hd-pro/specs/overview). The rest of the needs is made up of personnel costs regarding the acquisition of the images and the processing of the digital files.

The collection is currently located in the Sainte Barbe building, after being moved from the Sorbonne because of works in the library. For security reasons, a regular access to the tablets cannot be provided to students. As stated above, handcopies or even traditional photos are no totally satisfactory solutions. The training of students in cuneiform epigraphy will assuredly benefit from these 3D representations. Moreover, the presence of a great number of legal acts in this collection opens very stimulating educational opportunities and provides a base for a cooperation between S. Démare-Lafont and M. Guichard. Finally, there is no doubt that a new open-access website (to be designed for that purpose) displaying the 3D scans of the collection of cuneiform tablets will increase the international exposure of EPHE.

Furthermore, we can hope that members of the project who travel on mission to collections abroad will be able to use this portable equipment to scan in 3D the tablets they are entrusted with for study and publication: the Alammuš-naşir archive (Oriental Institute, Chicago), family archives of Isin (Yale), etc.

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<u>Caractère structurant pour PSL</u> - Préciser comment le projet permettra de développer, dans le cadre de recherches interdisciplinaires ou disciplinaires, des collaborations entre les établissements de PSL et/ou de nouvelles thématiques de recherche afin de contribuer à la structuration d'ensemble de la recherche au sein de PSL et à améliorer sa visibilité au niveau international. (2 000 caractères maximum) : Le projet DIGIBARCHI est bien un projet de recherche : le recours aux nouvelles technologies (informatique, scanner 3D) en constitue une dimension importante, mais il est conçu comme l'utilisation d'outils sophistiqués au service d'une entreprise historique et philologique, centrée sur les archives paléobabyloniennes. Le travail permettra notamment d'aboutir à la reconstitution virtuelle d'archives qui se trouvent dans la réalité dispersées entre de nombreuses collections, ou qui sont inaccessibles (momentanément, espérons-le, dans le cas des archives de Mari).

Ce projet constitue une contribution importante aux recherches de la communauté assyriologique mondiale et aura par définition une très forte visibilité internationale : les assyriologues sont peu nombreux dans chaque pays, mais ils forment un réseau international très dense (cf. ci-dessous des indications sur la consultation de la base ARCHIBAB).

Le projet DIGIBARCHI réunit 2 établissements membres de PSL, le Collège de France et l'EPHE, et inclut la participation de doctorants et de Post-Docs, ainsi formés à et par la recherche.

Il s'inscrit dans une actualité patrimoniale malheureusement dramatique (situation en Iraq et en Syrie) et permettra notamment d'offrir l'accès à des images de haute qualité des tablettes des archives royales de Mari. Il améliorera la visibilité internationale de la collection de tablettes de l'EPHE.

La garantie de résultats peut être considérée comme assurée par l'expérience du porteur de projet. La pérennisation des données est garantie par la base ARCHIBAB dans le cadre de l'Institut des Civilisations du Collège de France.



Fig. 7. Carte des pays où la base ARCHIBAB a été consultée de mi-février à mi-mars 2015. Après la France, on note l'Allemagne, les USA et la Russie... mais aussi l'Iraq, le Brésil ou l'Australie.

Préciser l'apport de l'établissement, les différents moyens mis à disposition par l'établissement d'accueil ainsi que la stratégie envisagée pour pérenniser l'équipe :

Le Collège de France met à la disposition du projet en particulier :

- des locaux dans le cadre de l'Institut des Civilisations sur les sites Cardinal Lemoine et Marcelin Berthelot ;

 les ressources physiques et numériques de la Bibliothèque d'Assyriologie au sein de l'Institut du Proche-Orient Ancien;

- les serveurs qui hébergent la base ARCHIBAB et la copie interrogeable sur le Web, dans la salle des serveurs du site Marcelin Berthelot.

L'EPHE met à la disposition du projet en particulier :

– la collection de tablettes conservée au Service commun de la documentation, des bibliothèques et des archives sous la responsabilité de M. J. Berchon sur le site Sainte-Barbe ;
– un local sur le site Sainte-Barbe pour la numérisation des tablettes ;

– le scanneur 3D "NextEngine" récemment acquis.

Le CNRS met à la disposition du projet en particulier :

- la gestionnaire de l'UMR 7192 ;

- l'abonnement aux ressources électroniques indispensables (CAIRN, JSTOR, etc.).

La synergie développée entre les participants sera pérennisée au sein de la chaire « Civilisation mésopotamienne » du Collège de France et de l'Equipe « Mondes mésopotamiens » de l'UMR 7192, à laquelle appartiennent la plupart des collaborateurs (à titre principal ou comme associés) et dont le Collège de France et l'EPHE sont les deux tutelles, en plus du CNRS.

