eIUS Use Cases

In these examples, underlined elements are based either on the original interview data or on feedback sent by the informants in response to draft versions of the use cases. Key activity types are highlighted in italics and relevant ICTs in bold.

Use Case 11 – Archaeology

Narrative

1. Martin is a Roman archaeologist interested in the dynamics of social and economic change in late Roman urban settlements across the UK. He leads a large research project involving the exploration of the Roman site of Casterium, carried out in short periods of fieldwork every summer. This year after the first excavation week he is particularly excited. Several metal ring keys were found in one of the peripheral trenches of the site, and this rather unexpected find may put the entire research in a new perspective.

2. As excavation can only be carried out during the short summer period, Martin needs to decide if over the next few weeks he should ask some of the team to further explore the peripheral trench, or carry on with the initial excavation plans. In front of his computer Martin opens the **Integrated Archaeological Database**, an online resource shared with partner organisations he has extensively used in the past few years, and *checks the matrix of stratigraphic relationship* for the new find.

3. Clive is the supervisor of the excavation unit who has found the ring keys. While he is having an early breakfast in the camp's kitchen, he *checks on his laptop connected to a **local ad-hoc wireless network** the latest data his trainees entered in the online database*.

4. After all the previous day's excitement, Clive has now got a chance to check whether the new find was properly documented. Clive looks up the database entry and notices that a piece of information entered via digital pen by a trainee is not fully accurate. He *logs into the database and corrects the entry*, while making a mental note to flag the error to the student who made it.

5. Field archaeologist Margaret is working in her camp-based office. Margaret is responsible with the organization of the excavation and scientific teams hosted on site. She has been very busy over the past few weeks getting the site ready for the summer dig and helping all the teams settle in. Now she can finally focus on another part of her job, which involves preparing contextual information for the off-site specialists who produce dating reports for the new finds.

6. In her office Margaret *looks up the **online database** and selects relevant data and photos* associated with the newly discovered keys. Although she could send all the information in an email linking to database entries, *she has to print and send it by post*, as the Roman metalwork specialist who is producing the report is less confident working online.

7. While preparing the contextual information pack, Margaret occasionally *copies relevant bits of data in a separate folder* labelled 'Late Roman'. This information will be useful in a few days time, when she and Martin *are meeting to discuss the interim report they publish each year from the excavation site*. *The report is published on the* ***Late Roman website***, an online resource they have initiated a few years ago to supplement material published in paper form. *The report will be updated and expanded into a fully fledged paper as the excavation results are being processed and analysed.*

8. Soil micromorphologist Sally *is busy taking soil samples* from trench X, the location where the ring keys were found a few days ago. To determine the precise location of the find Sally *uses an EDM* (electronic device measurer) provided by her institution, which records coordinates that can be accurately mapped on the **Ordnance Survey Grid reference**.

9. Sally *takes the soil samples to her university's lab and prepares phytoliths micro-photography slides* for inspection. She is intrigued by the occurrence of a silica sequence she has never come across before. Having checked UCL's **Old World Phytoliths image gallery**, Sally decides to phone a UCL colleague she had met last year at the Soil Micromorphology Group annual meeting to ask her opinion. As they speak, they *browse the image gallery and draw comparisons with a set of phytoliths* Sally has uploaded in the **Integrated Archaeology Database**. Inspired by the conversation, Sally *completes her report and uploads it in the database*.

10. A few days later Margaret sends the metalwork specialist Sally's report. The specialist *completes his dating report and emails it to Margaret, who uploads it in the site's database*. The two published reports help Martin decide on excavation priorities for the last two weeks of fieldwork. Unlike the initial plans, one part of the team will be asked to dig in the area adjacent to the new find.

11. August 25th 2008. Another summer excavation camp at Casterium has completed. The teams have left the day before and the tents field now looks totally deserted. Martin and Margaret are having a last cup of tea by trench X before heading home. They are exhausted, as they always are at the end of the fieldwork period, but this year's results have been particularly good. They have already received exciting feedback to the preliminary report published on the **Late Roman website**.

12. There is still a lot of work to be done to properly document and analyse the newly excavated material. *The initial document will be updated as further reports continue to come in*. But based on the previous years' experience, Martin and Margaret are confident that by the end of the year, in addition to the *online piece on the latest finds they publish each winter in* ***Internet Archaeology***, they will have a *related paper published off-line* in Journal of Archaeological Science.

Relevant ICTs

ICT	Comments
Internet Archaeology[1]	An open access peer reviewed archaeology online journal with full colour images, photographs, searchable data sets, visualisations and interactive mapping
Late Roman Insula IX[2]	A website exploring the Late Roman archaeology at a main UK site, designed to supplement material published in paper format. The website is integrated with an interactive guide and stratigraphic matrix diagram showing the main elements of archaeology and relationships between them
Integrated Archaeological Database[3]	An online archaeology database incorporating matrix of stratigraphic relationships between finds
Ordnance Survey Grid Reference[4]	A national mapping service providing a unique reference system that can be applied to all Ordnance Survey maps of Great Britain at all scales
Old World Reference Phytoliths[5]	An online image gallery for phytoliths plant cells

Commentary

The situation described and relationship between characters mainly reflect facts mentioned by the interviewees themselves and collected through direct observation on the excavation site where the interviews were taken.

Elements taken directly from interviews include:
- short intensive excavation period every summer
- the use of the online database and matrix of stratigraphic relationship both on and off site
- the use of digital pens by students to enter excavated material data directly in the online database
- the need to mail contextual information about the new finds to off-site specialists tasked with producing reports, as some of them cannot access, or are less familiar with, the online database
- the practice of gathering content for online and offline publications in parallel with preparing excavation reports
- the use of phytoliths online gallery to perform soil analysis and produce soil micro-morphology reports

1 http://intarch.ac.uk/
2 http://www.silchester.reading.ac.uk/later/index.php
3 http://www.iadb.org.uk/
4 http://www.ordnancesurvey.co.uk/oswebsite/gi/nationalgrid/
5 http://www.homepages.ucl.ac.uk/~tcrndfu/phytoliths.html

Comments from informants

- Overall the informants thought the use case was accurate and not far removed from a real life situation
- They thought it represented very well the iterative and inter-related nature of the discipline, and indicated how without e-infrastructure supporting the project it would be much harder to manage and integrate the different research strands.
- it was appreciated that an example was provided of a specialist who is less familiar with accessing materials online.
- the only suggestion for improvement, which was incorporated, was to have the new find checked against the matrix of stratigraphic relationships of the database

Other editorial considerations

Element	Usage
Links to direct quotes?	No
Year	Yes
Month	Yes
Time of day	Yes
Location given	No
Real institutions named	No
Real journals mentioned	Yes
Real conferences named	No