November 14, 2005
Chair Memo 05-5

TO: EECS Cabinet
    Senior Staff
    Academic Computing Group
RE: EECS Technical Memorandum Series
FROM: Jitendra Malik, Chair, EECS
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This memo establishes the EECS technical memorandum series. It defines department policy with regard to the memos and establishes the requirement that Ph.D. theses and masters reports be published as EECS technical memos.

1. BACKGROUND

The dissolution of ERL and its reorganization into ERSO, the ERL technical memorandum series is no longer supported. The CS memo series created by the California Digital Library Project paved the way for a more modern infrastructure, but is need of updating, and is no longer being supported. In view of this, the EECS department is taking responsibility for administering a technical memorandum series.

2. WHY HAVE A MEMO SERIES?

There are a number of reasons to have a memo series, including:

- *Precise dating of ideas, research results, and intellectual property*. A carefully administered memo series functions as a publication medium available to the EECS community that is subject to neither publication delays nor the possibility of rejection by the peer review process. As a consequence, an EECS technical memo provides a precisely dated archive. Such an archive can be useful in the event of disputes about originality and/or precedence of results.

- *Archive*. The memo series provides a permanent archive that is not subject to peer review. Thus, it is useful for results that are controversial, too small to publish in mainstream venues, too long and involved for the limited size of journal and conference papers, or otherwise difficult to publish.

- *Permanence*. The EECS Department is committed to ensuring (to the extent this is possible) that an EECS memo remains always available and that the URL provided for the memo remains valid as long as Internet technology continues to support such URLs. In addition, it is committed to adopting permanent locator technologies such as DOI (http://www.doi.org/) as such technologies become mature and generally accepted. As such, an EECS memo serves the archival function of archival journals. It can be used, for example, to archive conference papers that are recorded only informally or in impermanent ways by the conference organizers.

- *Supplemental publication.* An EECS memo can supplement a "normal" publication, providing a place to record, in a citable and available manner, details that do not fit in the normal publication, such as long proofs, software documentation, code listings, or elaborated examples.

- *Citable document for informal distribution*. Researchers often discuss research results openly prior to publication. An EECS memo provides a citable, dated document that can be distributed to interested parties. This reduces the risk of seeing ones results published without attribution in some third party paper.

- *Timely dissemination*. Many archival journals have long publication delays. The peer review process adds delay, as do backlogs due to limitations on the number of papers per issue. These delays can extend to several years. Even conferences introduce publication delays of several months. An EECS memo immediately provides an accessible and citable document to the community.

- *Archival journals as a write-only memory*. Although most archival journals provide distribution on the web, it is often provided with limited access only to journal subscribers. Moreover, such access limitations may limit the extent to which internet search engines such as Google can access the information in the papers. Together, these can result in very limited readership, which reduces the impact of the publications. An EECS memo goes into a searchable website immediately, and hence may generate more readership than an archival journal publication. This will be particularly true if the memo series becomes widely used among Berkeley researchers.

- *Open access to published material*. A recommended practice is to publish preliminary versions of papers as EECS memos. The papers can then be submitted to more conventional venues such as conferences and journals, and can be modified and elaborated in response to reviewer comments. Once the final version is published, if copyright policies permit it, the EECS memo can remain accessible on the Internet. It will typically be more widely accessible than the published counterpart, and hence will provide access to results, albeit in preliminary form.

- *Branding of Berkeley EECS*. While archival publications prominently display authorship, they often do not prominently display institutional affiliations of the authors. The EECS memo series will help promote the "Berkeley EECS" brand, particularly if it is widely used and if EECS memos are widely cited.

3. WHY NOT USE AN EXISTING MEMO SERIES?

The following memo series could, in principle, have been used instead:

- *ERL memos*. The ERL memo system, like much of ERL, was not functioning very well. Memos were recorded only on paper, were not posted on a website, and were not issued with appropriate controls on their integrity (e.g., there were reported incidents where backdating was permitted). Moreover, the submission process was outdated. The organization replacing ERL, ERSO, has had so many transition problems to deal with that it did not seem likely that these problems would be fixed. ERSO was happy to cede this responsibility to EECS.

- *California digital library (CDL) CS memo series*. This series is no longer being supported. Although the website is still up, it no longer works, and apparently there are no plans to update it.

- *California digital library (CDL) eScholarship repository*. (http://repositories.cdlib.org/escholarship/) This is a viable alternative, as it is a functioning and open publication mechanism. There are two disadvantages, however. First, it would be difficult to incorporate identity management that allows us to use the database for other purposes such as biobib generation, generation of departmental publication lists, etc. Moreover, use of this memo series does nothing to promote the Berkeley EECS brand.

Weighing these alternatives, and considering the relatively low cost of implementing an EECS memo series, our choice was to implement one.

4. ARCHITECTURE

Every memo will be uniquely numbered and labeled with a label of the following form:

Technical Report No. UCB/EECS-*year-number*

where the *year* is of the form "2005" (for example), and the number is a sequence number within the year. For example, the first memo submitted in 2006 will be labeled "Technical Report No. UCB/EECS-2006-1".

Every memo will show on the cover page the following information:

- Title.

- Authors.

- Organization: "Electrical Engineering and Computer Sciences, University of California at Berkeley".

- Technical Report No. UCB/EECS-*year-number*.

- A URL where the report can be found.

- The date of the memo (which is the date of submission).

The department will maintain on the web:

- A list of memos, organized by year.

- A search mechanism (or access to one).

- A "gateway" page for each memo that shows at least the title, authors, memo number, date, abstract (if one was provided), and a link to the document itself. This gateway will be an HTML page to facilitate search mechanisms. It will have a field that editable by any recognized author that is properly authenticated labeled "Author comments." The field can be used by the author to, for example, point to a more recent version of the paper or to indicate errata.

- A submission page that uses authentication to ensure that only members of the EECS community can submit memos.

Whenever possible, authors will be identified with respect to the same authentication mechanism.

Once a memo has been submitted, the submitter and any identifiable authors will be notified of the submission by email. The email message will provide a URL for the memo and complete citation information for the memo.

5. DEPARTMENT POLICY

The department is committed to following principles:

1.1. Permanence

The EECS department will make every effort to maintain a permanent record of EECS memos. This will include:

- Ensuring periodic offsite backups of the electronic archive.

- Maintenance of the URL assigned to a memo as long as that remains technically feasible.

- Ensuring high availability of the web servers that provide access to EECS memos.

If there is demand for it, the department may permit memos to be "withdrawn." If a memo is withdrawn, the department will continue to maintain a permanent copy of the PDF file, but will ensure that it is not readable from the web. It will, however, continue to list the title, date, and memo number and will maintain the published URL with an indication that the memo has been withdrawn.

1.2. Integrity

The EECS department will ensure that once an EECS memo has been issued, that its contents cannot be modified. This is essential for the memo series to function as a precisely dated archive of ideas, research results, and intellectual property.

For practical reasons, certain data in a memo can be modified after the memo is published. In particular, since a practical submission process relies on the authors for accuracy, there might be mistakes in the data they enter. For example, title words might be misspelled, or author names might be incorrect. If these errors are caught within one month of submission of the memo, the department will permit modification to make these corrections.

Under no circumstances will the department permit modification of the content of the memo. Specifically, no changes can be made to the PDF file that is uploaded as the content. Any

modifications that are made should only correct errors on the generated cover page, copyright page, and/or HTML gateway page.

1.3. Dating

The EECS department will ensure the integrity of dates of EECS memos. The date of the memo will be the date of submission. Backdating or dating in the future will not be permitted.

1.4. Copyrights

By default, the copyright for EECS memos will read as follows:

Copyright © *year*, by the author(s).

All rights reserved.

> Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission.

This copyright is identical to the standard copyright notice currently used on ACM publications.

If there is demand from the faculty, then the EECS department will consider other copyright notices, as long as such notices clearly authorize the department to post the memorandum.

The department cannot guarantee that authors will not post material that violates a copyright. It is department policy that it is up to the individual submitting a memo to ensure that publication of the memo on the department website does not violate any copyright constraints, to the best of his or her knowledge. The submission page will ask the submitter to attest to this fact.

1.5. Identity Management

The EECS department will identify unambiguously EECS authors by associating the authors with their Calnet identities. This is facilitated by providing author

6. Ph.D. THESES AND MASTERS REPORTS

The department will institute a requirement that every Ph.D. thesis and masters report be submitted as an EECS memo. The principal advisor will be identified in the submission process and will be associated with the document. This policy was put up for a faculty sense vote at the EECS lunch on November 7, 2005. The votes were overwhelmingly in favor, with none opposing the Ph.D. thesis requirement and only one opposing the Masters Report requirement.

7. POSSIBLE ADDITIONAL FEATURES

The department will implement a number of additional features, depending on available resources and priorities. Some possibilities include:

- *Expansion to a full publication database*. Subject to copyright constraints, the department may support posting of other publications, such as journal and conference articles. Where copyright constraints do not permit posting the contents of the paper, the department will provide a gateway page similar to that for EECS memos. If the copyright holder provides a persistent and permanent URL or other document identifier, the gateway page can provide a link to the published document. To facilitate populating the publications database with existing publications lists, the mechanism will support uploading from Endnote and Bibtex files, at least.

- *Query mechanisms for generating customized web pages showing publication lists*. For example, a URL with an embedded query specifying an author might return a formatted HTML page with a list of all the publications by that author that are in the database. A URL with an embedded query specifying a research center could return a similar page but listing all publications that can be identified as associated with that center. In addition, we could provide mechanisms for EECS faculty to list the Ph.D. theses and masters reports they have supervised on their own websites.

- *Biobib Generator*. We could provide a mechanism by which a URL with an embedded query would return a starting point for a biobib that includes all available relevant information. Initially, this could include publication information about EECS memos and other publications that have been entered into the database. Later, this could be expanded to include EECS committee assignments, teaching record, administrative assignments, and any other information present in the database.

- *Limited or Delayed Access Features*. We may provide mechanisms where access can be restricted, for example to be accessible only from on-campus sites, or only to some identifiable group of people. Sometimes, authors will want to make EECS memos that are not accessible to everybody. These limitations may also expire after some time, after which the memo becomes world readable. Such a mechanism might be required to, for example, meet requirements on research contracts or center membership agreements. In addition, a memo that had been world readable may need to be restricted where assignment of a publication copyright requires it (although withdrawing access has questionable effectiveness, since internet archives keep persistent copies of documents that are no longer on the web). In all cases, however, the department will post in a publicly readable way a gateway page, and will list these restricted memos along with other memos.

- *Persistent document identifiers*. The department will investigate persistent document identifier technologies such as DOIs (http://www.doi.org) that promise to create permanent links to documents on the web. As these become generally accepted, the EECS memos will have such persistent identifiers, and published documents that cannot be posted directly by EECS (due to copyright restrictions) will be pointed to using such technologies.

8. LEGACY TECHNICAL MEMORANDA

ERL memos, unfortunately, were never systematically recorded electronically. The master archive of these memos is on paper. Although electronic versions of many of these memos exist on the authors' websites, it is not practical for the EECS department to verify that those documents are in fact identical to the memos that were issued by ERL. Consequently, those

documents cannot just be assumed to be the memos. There are a number of possible approaches that the department could take to this problem:

- List these memos and create gateway pages for them, but do not attempt to provide the contents of the memos. This has been done.

- Scan the paper copies to create images of the master archive documents and provide those in PDF files on the web.

- Find PDF versions of the memoranda that are located on author websites and provide links to them with disclaimers that we cannot be sure that these documents are actually the same as the memos that were issued.

- Provide an "Author comments" field on the gateway page for these memoranda that permits authors to themselves provide links to the memo. The author can assert that the document is identical to memo issue if the author actually knows that it is (something that the EECS department cannot do).