IEEE History Activities Coordinator Report October 2013 — Prof. Tony Davies
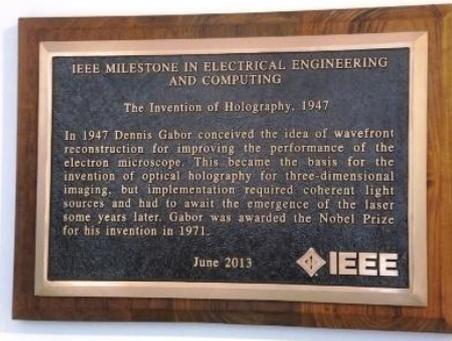
Activities from the past

- After the R8 Committee Meeting in Madrid, I visited the Telecommunications Museum of the Polytechnic University of Madrid (UPM) – it has a good collection, used to support a compulsory history course for the students in the Escuela Universitaria de Ingenieria Tecnica de Telecommunicacion.   Having such a course seems to me to be a good practice which could be adopted more widely.

Receiver made by Marconi Española SA

- I have a paper in IEEE Technology and Society Magazine about the history of the former IEEE sanctions against the Section and its members ("IEEE in a Persian Market", Vol.32, Summer 2013, pp 66-73).

- Two more Oral Histories of former R8 Directors were done during the Madrid R8 Committee meeting (Kurt Richter and Peer Martin Larsen) and the text transcripts are being finalised, after which they should be available on the GHN website.

Photos taken at the time of the Oral History Interviews in Madrid

- A History Milestone for the invention of Holography by Dennis Gabor was dedicated on 12th June 2013 at Imperial College London. The unveiling was done by the IEEE President, and the occasion included a technical seminar and a memorial lecture to Dennis Gabor given by prof Laszlo Solymar.   It was a pleasure to welcome several representatives from Hungary at this event.

- Another Milestone in Region 8 was dedicated in Croatia on 5th July 2013, for the Krka-Šibenik Hydro Power System. The construction work for this system started in 1884 at Jaruga, generating 3kV, two phase a.c.. The first power was delivered to Šibenik for street lighting in 1885, two days after the first supply from the Niagara Falls plant.   By 1906, a change was made to a three-phase system.

- I attended the unveiling of a plaque to Sir Francis Ronalds on 26th August 2013 at Highbury Terrace in Islington, London. This was not connected with IEEE, although it could have been. It was mounted on the house where he spend some of his childhood and where he did his first experiments with an electric telegraphy system, now not very well known, but which preceded the telegraph of Wheatstone and Cooke.   He received his knighthood for his electrical telegraph invention, which he demonstrated to the British Admiralty, who decided that there was no need for such an invention, semaphore being perfectly adequate for all their needs.

The 101st
IEEE Region 8
Committee Meeting

Sarajevo
Bosnia and Herzegovina
05-06 October 2013

Holography Milestone, London, 12 June 2013

Plaque for Sir Francis Ronalds after unveiling, and a 'duplicate' with the oldest local resident

I attended an international conference on the History of Computers organised in London at the Science Museum by working group WG9.7 of IFIP.   The conference had generous sponsorship by Google. Collaboration between this IFIP group and IEEE is recommended.

**Photo shown at History of Computers Conference
Russian computer Ural-1 – Restored to working condition. © Marina Smolevitskaya
Polytechnic Museum, Moscow**

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Future activities

- I continue as a Corresponding Member of the IEEE History Committee, and have been appointed by its Chair to investigate possible cooperation between IEEE and IET (former IEE) in the History of Technology area. At present, the IET building in London (Savoy Place) is closed for a two year refurbishment, and as a result library and archives services are severely restricted (and also face a somewhat uncertain future). Direct access from the GHN website to historical material in the IET website might be provided, balanced by easy log-in acces to the GHN webssite by IET members, but arranging this may not be easy.

- There are many opportunities for more IEEE History Milestones in Region 8, and I recommend that particularly those Sections which have few or no Milestones might investigate possibilities, taking into account that the time from initial proposal to approval by the IEEE Board of Directors typically takes at least two years. Do not forget that the Milestones are not an award to or recognition of a person, but are to recognise an achievement or invention (which must have been at least 25 years ago).
  Milestone proposals underway or about to be started include
  1. Heinrich Hertz demonstration in 1886 of electromagnetic waves (Karlsruhe University, Germany) (this provided practical confirmation of Maxwell's theoretical work)
  2. Metro line M1, the földalatti, oldest electric underground railway in continental Europe (Budapest, Hungary), still in operation since 1896.   London had an earlier system, initially steam traction, then electric traction, which became necessary when deep tunnelling was adopted; previously the cut-and-cover method was used, both for the London and Budapest metros.
  3. (a)   BESM (Большая Электронно-Счётная Машина) computer developed at Kharkov in Ukraine
      (b)   'Zenit' L-band three-coordinate radar, also developed at Kharkov in Ukraine
       (A milestone proposal was submitted for Zenit in 2003, but not followed up)

  Also being discussed:
   Geothermal Energy in Iceland,
   Invention of multi-phase power transformer by Zipernowsky at Ganz company in Hungary,
   PCM invention by Alec Reeves in Paris,
   Leo Computer in UK (first use of a digital computer for commercial data processing at Lyons Company,
                Cadby House, West London, for the catering business).
   John Logie Baird's TV inventions in UK (large-screen TV, 3D TV, etc.).
   Alan D. Blumlein's inventions at EMI for stereo recording in UK
                                        and several others.

- IEEE Spectrum will be 50 years old next year (2014). To celebrate, the Editor is planning a series of items describing major achievements which have taken place in IEEE's fields of interest in the last 50 years.   A request has been made for suggestions from Region 8, and I have supplied several.   It is expected that Spectrum will send a reporter to interview appropriate people for those chosen, and use this as the basis for whatever is published in Spectrum.

Best practices

- There is a close connection in the UKRI Section between the Life Members Activity Group and History topics (both History of IEEE and History of Technology).   This seems a 'natural' connection, and is recommended to other Sections to consider.   A connection between these activities, student activities and the Social Implications of Technology Chapters seems also very appropriate. The Section has appointed a Section Historian (currently Peter Hill).

Points of concern / Topics for future discussion

- Piscataway policy is now that e-mails and many electronic documents more than three years old are automatically deleted unless steps are taken to preserve them. That places greater responsibility on Sections and Chapters to retain their own records for historical purposes. In future, Piscataway may not be able to provide historic documents of the kinds which were valuable in the R8 Jubilee investigations.

- There is much scope for interesting History of Technology conferences, of which the R8 initiated HISTELCONs are a good example (Paris 2008, Madrid 2010, Pavia 2012).   However, for most IEEE members, attendance has to be paid from their personal funds, because employers and research contracts are usually not appropriate to pay the travel and registration fees.   This makes them too expensive for many of those who would be interested in them, and also typically results in a small

attendance. This restriction does not apply to technical museum curators and professional historians, who may have funding to attend such events. However, IEEE has not been very successful in marketing its events to this kind of participant, who are typically not IEEE members and see no reason to join.

- As part of last year's Jubilee activities, all Sections in R8 were encouraged to write their Section Histories and make them available on the GHN website. Some have done this very thoroughly, but in a number of cases, there is not much information provided.   These Sections are encouraged to review what they have done, and consider an improved entry. I would be glad to try to assist any who ask for help.

- The IEEE History Center is expected to have a presence at the Sections Congress in Amsterdam next August. Suggestions are being made to have a Life Members session at the Congress, which might include a history-related theme. It is not yet known if the Congress organisers favour such an idea, and the Life Members and the Life Member Activity Group Chairs may, in most cases, have no financial support to attend the Congress, and many may be retired with limited incomes.

- Assessment of Milestone proposals is mostly done openly on the GHN website: all IEEE members can obtain login access, and are encouraged to contribute to this process. It is important that proposals are reviewed by as many people as possible, to ensure that correct and appropriate claims are made. The IEEE History Committee, which makes the decisions whether to approve them, benefits from such advice.
  The list of milestones proposals currently in progress can be found at
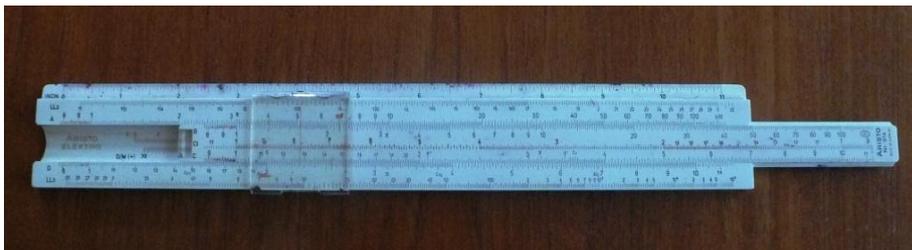 http://www.ieeeghn.org/wiki/index.php/Special:MilestoneProposals
  A large proportion are in USA, which reinforces the importance of contributions from Region 8 in the assessment process, to ensure that fair claims are being made, and for increasing the number which recognise the many pioneering historical achievements in Region 8.
  A proposal is currently under review for the CRC102-A computer, installed at Politecnico di Milano, Italy, in 1955. This computer was designed and built in California and brought to Italy, where it is believed to be the first to be installed there.   Another proposal under review from Italy is for Marconi's first wireless experiments.

Progress and change in electronic components, from pentode valve to i486DX CPU

Progress and change in electronics engineer's tools, from slide rule to calculator in smart phone