IEEE United Kingdom & Republic of Ireland Section

A Brief History

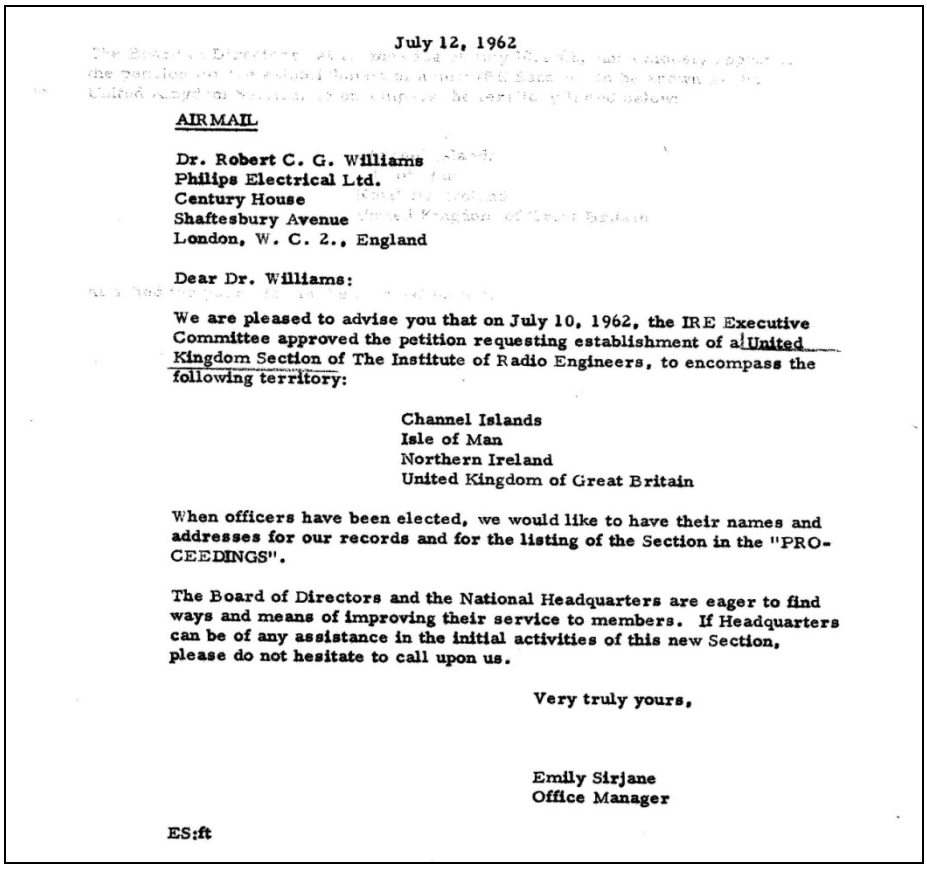
A Brief History of IEEE UK&RI Section

Nihal Sinnadurai
Chair, IEEE UK&RI Section

The United Kingdom and Republic of Ireland derived its roots from the American Institute of Radio Engineers and was established in 1962. Immediately following this founding, the IRE merged with AIEE and became the Institute of Electronics and Electrical Engineers - with a clear intention to be global and transnational. This transnational intention is recounted by those who were present at that time.

The IRE was active in the USA after the Second World War. Its publications progressively improved and became the benchmark for professionalism. In the late 1950s, a group of past presidents of the IRE toured Europe to explore whether it was possible to develop branches of the American IRE in Europe. Their first call was to the IEE in England, because of a close relationship with the IRE in America. Exploration of an option to form a section of IEE failed to arrive at a reasonable solution.

Robert Williams had spent a few months touring to find what interest there was to form an IRE branch in the UK. He returned to America and the interest appeared to die away. Then, when in England in late December 1961, Williams received a call from America from one of the group who had been touring Europe. They had decided to set up an IRE group in the UK and to nominate Robert Williams as chairman. He was invited to pick his own committee. Because Williams was closely involved with the UK IEE and in line for elevation, he was concerned to avoid conflict. Deliberating over a number of months, Williams decided to recruit past presidents of the IEE – which achieved both an eminent contingent with which to start the Section and avoided conflict with IEE. A measure of his success was that over half the founding committee comprised past presidents of the IEE.



July 12, 1962

AIRMAIL

Dr. Robert C. G. Williams
Philips Electrical Ltd.
Century House
Shaftesbury Avenue
London, W. C. 2., England

Dear Dr. Williams:

We are pleased to advise you that on July 10, 1962, the IRE Executive Committee approved the petition requesting establishment of a United Kingdom Section of The Institute of Radio Engineers, to encompass the following territory:

Channel Islands
Isle of Man
Northern Ireland
United Kingdom of Great Britain

When officers have been elected, we would like to have their names and addresses for our records and for the listing of the Section in the "PROCEEDINGS".

The Board of Directors and the National Headquarters are eager to find ways and means of improving their service to members. If Headquarters can be of any assistance in the initial activities of this new Section, please do not hesitate to call upon us.

Very truly yours,

Emily Sirjane
Office Manager

ES:ft

Founding members included Sir Edward Appleton (Appleton layer), Sir Noel Ashbridge, (past Chief engineer of the BBC), M Barlow, S Barlow, F. S. Barton (nominally Secretary of the Section), Sir Harold Bishop (Chief engineer of the BBC), Boyce, Brian Donkin, Basil de Ferranti (of Ferranti & briefly Minister of Technology), Sir Archibald Gill (Chief engineer of the Post Office), Sir John Hacking (Central Electricity Generating Board (CEGB)), R. L. Smithrose (Head of the Department of Scientific and Industrial Research (DSIR)) Pat Bevan (Chief engineer of the Independent Television Authority (ITA)).

Thus, Robert Williams became the first, founding, Chairman of United Kingdom Section of the IRE. At that time, memberships of the IRE and the AIEE totalled about 1100 in the UK - which was more than half of that in the whole of Europe. Williams saw his chairman's role as keeping the group together. Meetings of the committee, rarely of the whole, because of its size, were usually at IEE and were often casual.

According to Arthur P Cable, a Brit who was a long standing member of AIEE (since 1951), the first meeting of the UK Section was sparsely attended by about 8 members. Early meetings tended to be ad hoc, and tenure of office was not formalised. Cable offered his support to the new team but could not join the committee because of business commitments which required frequent travel abroad.

With the merger of IRE and AIEE, Williams found that he had become Chairman of an IEEE UK Section with a membership greater than 50% of the IEEE in all Europe. The new IEEE committee followed a UK customary practice and invited members in the Irish Republic to join forces. In a spirit of cordiality, the Section was first named 'United Kingdom and Eire Section'. However, this caused confusion in the States because of its similarity with Erie, Pennsylvania. Many documents intended for the Erie section were sent instead to Williams. Bob Winton then checked that the legal name was Republic of Ireland. So, the name of the Section was formalised to IEEE United Kingdom and Republic of Ireland Section.

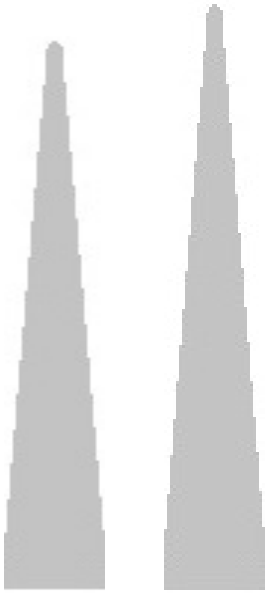
The founding was comprehensively covered in many journals and electronics magazines including: *The Engineer; Electronics Weekly; The Wireless and Electrical Trader (*which was the main trade organization); *The Wireless World; Nature; the IEE Journal;* the *Electrical Review; Control; Process Control and Automation; The Electrical Times; Electronics Components; World Medical Electronics and Instrumentation; Research and Development for Industry; Practical Wireless;* and *British Communications and Electronics.*

So, the UK&RI Section was founded, grew and diversified. Its volunteers also became key players in IEEE Region 8. Over the years, Chairpersons and other officers changed and the process moved appointment to office to election by the full membership, each being appropriate to its time.

As the Section grew, initiatives were taken to be ambassadors to establish IEEE presence in countries of Europe separated by the Iron Curtain. Arthur Cable, whose travels took him to a number of Eastern European countries undertook some of these ambassadorial missions.

UK&RI Section Chairmen and their affiliations (we have yet to elect a woman to be Chair) were:

Chairperson	Dates	Notes, Affiliations	Members	Chapters
Robert Williams	1962 +	Appointed by USA IRE as Founding Chair of Section, IRE and then IEEE Secretary was F S Barton Assistant Secretary was Bob Winton	1100	
F.J. Lane				
Reginald Russell		Later R8 Director 1973-74		
M.N. John				
C.T.W. Sutton				
R.H. Davies	1974 +	Vice chairs: R.W. Addie (Plessey), C.C. Barnes. Secretary: W.H. Devenish (ERA), Treasurer: B.J. Cory (Imperial)		
Bob Winton	1976-1977			
Basil Osborne				
Roger Pollard				
Charles Turner				
Roland Saam	1990-1991	Micros for Managers		
Anthony Davies	1992-1993	King's College London		
Brian Harrington	1994-1995		5000	13 Chapters
Roger Pollard	1996-1997	University of Leeds		
Roland Saam	1998-1999	Micros for Managers		
Thomas Hammons	2000-2001	University of Glasgow		
Simon Jones	2002-2003	Univ of Bath / Media Lab Ireland		
Gordon Dodds	2004-2005	Queens University Belfast		
Narayan Jayaram	2006	London Metropolitan University. Resigned late 2006, Vice-chair took over.		
Seán McLoone	2006-2009	NUI Maynooth		
Christopher James	2010-2011	Univ of Southampton/Univ of Warwick		
Nihal Sinnadurai	2012-2013	Oclaro & ATTAC	10900	33 Chapters 5 Affinity Gps



As of February 2012 UK&RI Section has we have 10900 members, 33 Chapters, 5 Affinity Groups and a number of active functions such as Professional Activities and Industry Liaison.

Commemorations and Milestones

In more recent years a number of the UK&RI team realised that there have been many notable achievements by great scholars and innovators in UK and Ireland, which deserved formal recognition. Their efforts resulted in a number of commemorations both by IEEE and national bodies. And the programme is ongoing ....

Benjamin Franklin's Work in London, 1757-1775
London, England, Dedicated 31 March 2003 - IEEE UK&RI Section
Benjamin Franklin, American electrician, printer, and diplomat, spent many years on Craven Street. He lived at No. 7 between 1772 and 1775 and at No. 36 from 1757-1762 and again from 1764-1772. During these years, Franklin popularized the study of electricity, performed experiments, and served as an advisor on lightning conductors.

Callan's Pioneering Contributions to Electrical Science and Technology, 1836
Maynooth, Ireland, Dedicated 5 September 2006 -- IEEE UK&RI Section
Reverend Nicholas Callan (1799 - 1864), professor of Natural Philosophy at Saint Patrick's College Maynooth, contributed significantly to the understanding of electrical induction and the development of the induction coil. He did this through a series of experiments that made the inductive transient phenomena visibly clear. The apparatus used in these experiments was replicated in other laboratories.

Maxwell's Equations, 1861-1870
Glenlair, Scotland, Dedicated 13 August 2009 -- IEEE UK&RI Section
Between 1860 and 1871, at his family home Glenlair and at King’s College London, where he was Professor of Natural Philosophy, James Clerk Maxwell conceived and developed his unified theory of electricity, magnetism and light. A cornerstone of classical physics, the Theory of Electromagnetism is summarized in four key equations that now bear his name. Maxwell’s equations today underpin all modern information and communication technologies.

County Kerry Transatlantic Cable Stations, 1866
County Kerry, Ireland, Dedicated 13 July 2000 - IEEE UK&RI Section
On July 13, 1866 the Great Eastern steamed westward from Valentia, laying telegraph cable behind her. The successful landing at Heart's Content, Newfoundland on July 27 established a permanent electrical communications link that altered for all time personal, commercial and political relations between people across the Atlantic Ocean. Later, additional cables were laid from Valentia and new stations opened at Ballinskelligs (1874) and Waterville (1884), making County Kerry a major focal point for global communications. County Kerry has dedicated part of their web site to this event. You can find the Milestone under "Heritage".

Fleming Valve, 1904
London, England, Dedicated 1 July 2004 -- IEEE UK&RI Section
Beginning in the 1880s Professor John Ambrose Fleming of University College London investigated the Edison effect, electrical conduction within a glass bulb from an incandescent filament to a metal plate. In 1904 he constructed such a bulb and used it to rectify high frequency oscillations and thus detect wireless signals. The same year Fleming patented the device, later known as the ‘Fleming valve'.

Shannon Scheme for the Electrification of the Irish Free State, 1929
Ardnacrusha, County Limerick, Ireland, Dedicated 29 July 2002 (IEEE Milestone and ASCE International Historic Engineering Landmark) -- IEEE UK&RI Section.
The Shannon Scheme was officially opened at Parteen Weir on 22 July 1929. One of the largest engineering projects of its day, it was successfully executed by Siemens to harness the Shannon River. It subsequently served as a model for large-scale electrification projects worldwide. Operated by the Electricity Board of Ireland, it had an immediate impact on the social, economic and industrial development of Ireland and continues to supply significant power beyond the end of the 20th century.

Code-breaking at Bletchley Park during World War II, 1939-1945
Bletchley Park, United Kingdom, Dedicated 1 April 2003 -- IEEE UK&RI Section
At this site during the 1939-45 World War, 12,000 men and women broke the German Lorenz and Enigma ciphers, as well as Japanese and Italian codes and ciphers. They used innovative mathematical analysis and were assisted by two computing machines developed here by teams led by Alan Turing: the electro-mechanical Bombe developed with Gordon Welchman, and the electronics Colossus designed by Tommy Flowers. These achievements greatly shortened the war, thereby saving countless lives.

First Transatlantic Television Signal via Satellite, 1962
Goonhilly Downs, Cornwall, England, Dedicated July 2002 -- IEEE UK&RI Section
On 11 July 1962 this site transmitted the first live television signal across the Atlantic from Europe to the USA, via TELSTAR. This Satellite Earth Station was designed and built by the British Post Office Engineering Department (today BT Research Labs). Known as 'Arthur' (of "Knights of the Round Table" fame), its open-dish design became a model for satellite television earth stations throughout the world.

Invention of Public Key Cryptography, 1969-1975
Cheltenham, England, Dedicated 5 October 2010 -- IEEE UK&RI Section
At Great Britain's Government Communications Headquarters (GCHQ), by 1975 James Ellis had proved that a symmetric secret-key system is unnecessary and Clifford Cocks with Malcolm Williamson showed how such 'public-key cryptography' could be achieved. Until then it was believed that secure communication was impossible without exchange of a secret key, with key distribution a major impediment. With these discoveries the essential principles were known but were kept secret until 1997.

Invention of Optical Fibre for transmission of Light-waves, 1966
Standard Telecommunication Laboratories, in Harlow, England
6 October 2009—The Nobel Prize in Physics was awarded to IEEE Life Fellow Charles Kuen Kao
On 20th March 2012, his colleagues and the civic authorities dedicated plaques at Harlow to Sir Charles Kuen Kao – IEEE UK&RI Section,
Nobel Prize for “for groundbreaking achievements concerning the transmission of light in fibres for optical communication”. It was his conception and dedication in the face of much scepticism that led to the demonstration and subsequent proving of optical transmission through glass fibres. Today, high-speed broadband would not be possible without his achievements.

Acknowledgements

1. Bob Winton, Mick Byford, Robert Williams, An oral history conducted in 1995 by William Aspray, Interview #257, IEEE History Center, New Brunswick, NJ, USA.
2. Reginald Russell, An oral history conducted interview by Tony Davies, January 2012
3. Arthur P Cable, an oral interview conducted by Nihal Sinnadurai, March 2012.
4. Compilation of Section Chairs by Tony Davies, January 2012