

Institution of Railway Signal Engineering

FORMAL PETITION

TO THE KING'S MOST EXCELLENT MAJESTY IN COUNCIL THE HUMBLE PETITION OF THE INSTITUTION OF RAILWAY SIGNAL ENGINEERING SHEWETH AS FOLLOWS:

This Petition is submitted on the authority of a unanimous resolution of the Members of the Institution of Railway Signal Engineering (hereafter referred to as 'the IRSE')

INTRODUCTION

The IRSE is the preeminent professional institution for all those engaged in - or associated with - railway signalling and telecommunications, train control, traffic management and allied professions. The IRSE was formed in London in 1912 and has grown to occupy a unique and exclusive position worldwide in the sector. It has its Global Office in London, UK, from where it provides support to its volunteer sections worldwide.

The IRSE aims to advance the science and practice of train control and related communications engineering, and to maintain high standards of knowledge and competence within the profession which requires very domain specific and detailed knowledge and skills. The overriding purpose in doing this is for public benefit, to help ensure the safe and efficient movement of people and freight by rail.

The long life of railway assets means that every generation of signalling technology is still in use today, delivering day to day passenger and freight services. In the UK, Network Rail still has several hundred mechanical signal boxes, including the largest still operational anywhere in the world: Severn Bridge Junction in Shrewsbury, built in 1902 to a design dating from 1876, with 180 levers, 89 of which are still in use, signalling nearly 300 train movements a day. Many electromechanical (relay) based systems remain in service. In recent years more integrated systems based on computers have emerged, merging all the functions described above and even allowing fully automatic trains with no driver or on-train staff at all. These digital train control systems are now common on metro railways but increasingly finding their way onto mainline railways too. Examples of the latter include the core sections of both Thameslink and the Elizabeth Line which use Automatic Train Operation (ATO) through the tunnels as human drivers are unable to be consistent enough to deliver the capacity required. The IRSE has a unique task in supporting engineers to maintain a wide range of competencies spanning multiple technology generations.

The IRSE is licensed by the Engineering Council as a professional engineering institution, and under that license assesses candidates for inclusion on the national register of professional and technician engineers. It assesses the competence of its members, requires them to undertake continuing professional development, and it provides a code of professional conduct (supported by a professional enquiry procedure) to which they must abide. It also organises meetings, conferences and conventions, and publishes information and guidance for its members.

MEMBERSHIP

Membership of the IRSE has steadily grown. As at [date of petition] it stands at 5042 with 50% of members based outside of the UK. The IRSE and its members are currently active in 57 countries and territories worldwide.

The IRSE has five main grades of membership as follows:

Affiliate: For those in the full or part time process of gaining a qualification, on a formal training programme, or who are engaged in or simply interested in railway signalling and telecommunications.

Accredited Technician: For those actively engaged in the railway control and communication engineering profession working at responsible experience level and able to demonstrate their competency in signalling or telecommunications engineering through an apprenticeship or competence assessment scheme such as the IRSE Licensing Scheme.

Associate Member ('AMIRSE'): For those working at responsible experience level, exercising their professional engineering judgment in the field of railway control and communications, and making decisions on specific areas of their work. They will normally have completed at least 3 years' practical experience.

Member ('MIRSE'): For those working with senior responsibility, taking significant engineering decisions affecting technical and organisational output and providing guidance to others. They will normally have worked for at least 7 years in a position of responsibility.

Fellow ('FIRSE'): For senior managers in railway control and communications businesses who dictate business and technical policy, and for those recognised as experts in their field of railway control and communications. They will be working at a superior responsibility level, exhibiting leadership, vision, and strategy within the profession by advancing the science of railway signalling and telecommunications, promoting the professional development of individuals and furthering the objectives of the IRSE. They will normally have held a post with senior responsibility for at least 5 years.

Members move up the grades as they gain academic qualifications either through recognised engineering courses or through the IRSE's examinations and as they gain additional recognised experience. In accordance with its code of professional conduct, all members are required to maintain their continuing professional development facing sanctions for failure to comply with the code if they do not.

In addition, there are two categories of honorary membership which can be awarded to individuals by Council.

Honorary Fellows: are persons who, in the opinion of the Council, have rendered outstanding or exceptional services to the Profession, or the Institution, or have furthered the objects of the Institution, and are deemed by the Council worthy of such admission.

Companions: are persons who are, by their association with the Profession, or through their occupation of a position of eminence, desirous of furthering the objectives of the Institution and (in the opinion of the Council) are worthy of such admission.

The IRSE is a professional engineering institution licensed by the Engineering Council and can award professional registration in the following titles:

- Chartered Engineer (CEng) - normally holding a master's degree or equivalent qualification and relevant experience in the discipline.
- Incorporated Engineer (IEng) - normally holding a bachelor's degree or other relevant academic qualifications such as HNC/HND and relevant experience in the discipline
- Engineering Technician (EngTech) – normally holding a level three qualification or equivalent together with relevant experience in the discipline.

ACHIEVEMENTS AND PRESENT ACTIVITIES

The IRSE supports specialist education for the industry, the dissemination of good practice and professional development.

The IRSE advises HM Government via the Department for Transport, the Office for Rail and Road, and the Rail Accident Investigation Branch. Digitisation and improved train control are fundamental to the efficiency savings and service improvements that the Government is seeking. Given the current near duopoly in UK railway signalling and control, there is a clear need for competent independent advice. The IRSE provides this directly, and through those of its members who are also members of The Royal Academy of Engineering.

In the United Kingdom the IRSE has a key role for Network Rail, TfL and their maintenance and renewal contractors through the IRSE Licensing Scheme ('the Scheme'). The Scheme was introduced in 1994 following the investigations of the 1988 Clapham Junction rail crash and provides vital competence assurance of staff working on safety-critical assets in the railway signalling and telecommunications industry. Possession of a license is essential to carry out signalling and telecommunications engineering work for Network Rail and London Underground. Licenses can be permanently removed or suspended in the event of incompetent or sub-standard work. There are currently 5,800 license holders, who are not necessarily IRSE members.

The IRSE has a standing International Technical Committee ('ITC') drawn from the most experienced leaders and engineers across the industry. The ITC studies key issues facing the industry in terms of technology development, deployment, operation, maintenance, and de-commissioning. It produces in-depth technical papers on these subjects, which are published in the IRSE News and available on the IRSE website.

The IRSE Professional Examination, now known as the Advanced Diploma in Railway Control Engineering, is a Masters-level academic qualification which tests knowledge and understanding of railway systems with a particular emphasis on safety. Successful exam candidates must pass all four mandatory modules.

Passing the IRSE Advanced Diploma is one method of satisfying the educational requirements to obtain Corporate Membership of the IRSE, and it can be supplementary to engineering or technology qualifications for professional registration with UK's Engineering Council.

The Certificate in Railway Control Engineering Fundamentals covers all aspects of railway control engineering at a foundation level. It is a stand-alone qualification as well as a mandatory module for anyone wishing to pass the Advanced Diploma. It is a valuable qualification for those in the railway control systems industry – for new entrants and those wanting to demonstrate their wider knowledge, as well as for those who are outside our industry – those working in other interfacing disciplines and those who are interested in potentially joining the industry. Candidates for the Certificate do not have to be IRSE members. Passing the IRSE Certificate is one route to becoming an Accredited Technician or Associate Member.

The IRSE organises a biennial major technical conference called 'ASPECT.' At this conference, the best technical papers on railway command and control from around the world are presented. This event moves to different locations around the world to promulgate technical excellence to the signalling and communications community.

On the alternate years to ASPECT, the IRSE organises an International Convention. Each Convention focuses on technical developments in the location where it is held, and delivers technical papers, lectures and organised technical visits to see projects, infrastructure, and development activities on the host railway(s). This provides a significant opportunity to see good practice outside of the delegates' home environment.

The IRSE's Hewlett/Fisher fund provides bursaries for younger members to attend ASPECT or a Convention to further their education and experience.

The IRSE promotes best practice and education for railway signal engineering in a number of different ways. The IRSE News is published 11 times per year. All the IRSE's technical outputs are published in its annual 'Proceedings'. In recent years this has been in digital form via the IRSE's website, and a hard copy is provided to the British Library.

The IRSE's website is a significant repository of industry knowledge. It contains copies of the IRSE News, all ITC topic papers, Presidential papers and a 'Knowledge base.' In recent years video recordings of key technical presentations have also been made available. The website is also a tool for publishing and booking events both centrally and regionally.

The IRSE has several prizes and awards which celebrate excellence, inspire colleagues, and promote the IRSE within train control and communication systems engineering. It also publishes textbooks and good practice guides and provides input to the Department of Transport on rail control and communications matters.

The IRSE regards the equal and fair treatment of all its members, employees and volunteers as a vital part of how we work as an organisation. The IRSE provides services which embrace diversity and promote equality of opportunity. Our goal is to ensure that the Institution's commitment, reinforced by its values, is embedded in its working practices with its staff, volunteers, members and other stakeholders. The IRSE believes that the principle of equal opportunities should govern every aspect of its work, and that all staff, applicants for jobs, members and volunteers, and members should be treated equitably and fairly. The IRSE has a nominated member of Council who is the portfolio holder for ED&I and reports regularly on progress of our policy.

The IRSE Licensing Scheme operates within the confines of the wholly owned subsidiary IRSE Enterprises Ltd and is a not-for-profit venture. It ensures the competence of individuals to undertake technical safety-critical or safety-related work on rail control systems. The Licensing team, employed by IRSE, collaborates closely with the Licensing Committee, which is chaired by a senior member of the railway signalling and communications community.

MANAGEMENT AND FINANCES

The IRSE is governed by an elected Council with representatives of each corporate membership grade and the geographic areas where the IRSE is active. The IRSE is both a registered charity and a limited liability company. IRSE Enterprises is a limited liability company through which IRSE operates not for-profit activities which sit outside of the charitable objects. Members of IRSE Council are both Trustees and Directors. The Directors of IRSE Enterprises are drawn from the Members of Council.

The IRSE operates several Standing Committees associated with its administration such as the Management Committee, the Audit Committee, and the Finance Committee. The IRSE has six Regions in the UK, and 15 overseas sections, each with their own local committees. It also has specific groups for early careers engineers and for minor railways, which focuses on maintaining safety standards on heritage lines.

Management of the IRSE's finances are devolved to its Finance Committee, which provides reports to the trustees through Council. Major decisions affecting the operation of the charity are referred to the trustees by the Finance Committee for ratification. Day to day operation of the IRSE's and IRSE Enterprises finances is devolved further to the Chief Executive and the Treasurer.

Like many charities the IRSE has a wholly owned subsidiary, IRSE Enterprises Ltd, to allow it to run activities relevant to its membership but not directly related to its charitable aims such as its Annual Dinner. This structure isolates the charity from the risks associated with these activities whilst allowing any surpluses achieved to be donated to the charity supporting its work.

IRSE Enterprises is ultimately controlled by the charity's trustees through Council. Operationally, there is a managing board empowered to run the company. Reports are given to the trustees, as representatives of the shareholder at Council meetings.

CONCLUSION

The IRSE provides unique advice and guidance on good practice across a wide range of existing and emerging control and communications technologies that underpin the safe operation of railways and other guided transport systems. No other institution operates in our specific area of expertise. It is this leadership role in safety that underpins our application for a Royal Charter.

Our industry partners, Network Rail, TfL and the signalling and communications suppliers all support our application.

The IRSE believes the responsibilities that it and its members have in ensuring safe, efficient and environmentally sustainable transport are vital to the public interest. The IRSE believes that it has reached the stage where the extent and continuing importance of its work means that the Grant by the State of a Charter of incorporation in perpetuity is desirable and justified.

YOUR PETITIONERS therefore most humbly pray that Your Majesty may be graciously pleased in the exercise of Your Royal Prerogative to grant a Charter to Your Petitioners in the terms of the draft herewith submitted or in such other terms as may to Your Majesty seem proper.

And Your Petitioners will ever pray etc.