### SIG COMMS+ROOMS

### Introduction

The Special Interest Group for Communications and Room Acoustics (SIG-COMMS) will bring together researchers and practitioners developing solutions to improve communication and the internal environment for people. The aims of the group are aligned with those of the Network, focusing in particular on generating and developing research activity in speech, hearing, communication, electro-acoustics and room design to facilitate the targeting of key national and international research challenges and priorities. The SIG will act as a forum for those working within communication and room acoustics to exchange ideas and to address critical issues, such as improving the outreach of acoustic research and solutions, optimising electro-acoustic systems or fathoming ways to reproduce the acoustics of rooms for the benefit of all people. The SIG will also facilitate access to and sharing of resources in order to accelerate the UK’s position in this field. Since communication is fundamental to people, and as such underpinning a diverse range of acoustics applications, the SIG-COMMS will work to encourage outreach research activities. In particular, the SIG-COMMS will coordinate with the Speech and Hearing Group within the Institute of Acoustics, the Audio Engineering Society, and the Technical Committee for Architectural Acoustics in the Acoustical Society of America and the Newman Advisory Panel. The SIG COMMS will encourage participation and contributions from industrial developers, contractors, and consultants in the fields of communication, speech and hearing. electro-acoustics, and architectural acoustics.

### Challenges

Whilst the applications and objectives of research for improving communication for people in rooms may vary across industry and universities, there are still a number of common technical issues that need to be addressed: (i) the creation of an exhaustive guide to room acoustic simulations involving numerical approaches in computer modelling (e.g. numerical schemes, their intrinsic accuracy, computational limitations, etc.); (ii) the development of cutting-edge electro-acoustic solutions to improve communication in indoor and outdoor spaces; (iii) share and improve state-of-the-art measurement techniques to quantify or visualise sound fields in rooms more accurately; and (iv) improving and democratising the state of audio reproduction techniques particularly for virtual reality applications.

**Activities**

A range of activities is proposed. The SIG-COMMS will be part of the annual summer school event for early career researchers (ECR) run in conjunction with the whole network. The event is open to senior SIG representatives of the acoustics community to lead some activities and to provide guidance for others. Some activities for this event would include professional development, leadership, team working, managing your supervisor, making your voice heard, presentation skills, planning your career development and media training. The other activities will be technical presentations by leading researchers, industrial users or commercial partners on specific topics. The SIG-COMMS will work closely with the Institute of Acoustics supporting the annual Reproduced Sound conference, and the bi-annual Institute of Acoustics Auditorium Acoustics meeting. These presentations will facilitate discussions focussed on identifying key challenges in this field of research. There will also be brainstorming sessions where research growth areas will be identified, pooling problems that need addressing. These activities will be followed a sandpit to develop competitive proposals for pilot studies to be funded by the Network. Secondly, the SIG-COMMS will support short exchanges for ECRs, advanced researchers, industry users or commercial developers to work in another organisation in the UK in acoustics, whether academic or commercial. This activity will promote training, interaction and cross-fertilisation of ideas and techniques. Finally, the SIG-COMMS will support outreach activities that will be coordinated centrally for the Network. Media training can be included in the summer school event for ECRs or funded separately. A section on communications, electro-acoustics and room acoustics will be compiled by group members and developed into an acoustics Wiki. A brief introduction to each challenge will be available through this resource, with links to further information, recent papers, commercially available software and users providing commercial consultancy.