BATWOMAN

Basic Acoustics Training - & Workprogram On Methodologies for Acoustics - Network

OPEN POSITION AT "MDW" IN THE FIELD OF MUSICAL ACOUSTICS

BATWOMAN (Basic Acoustics Training - & Workprogram On Methodologies for Acoustics - Network) is the **Initial Training Network (ITN)** No. 605867, funded under the FP7 Marie Curie programme of the EC. **Duration:** Sep. 1, 2013 - Aug. 31, 2017.

BACKGROUND: The BATWOMAN ITN aims at structuring research training in basic and advanced acoustics and setting up a work program on methodologies for acoustics for skills development in a highly diverse research field offering multiple career options.

The consortium consists of renowned public and private partners from musical acoustics, room acoustics and automotive acoustics who will merge their existing knowledge, extend it jointly and complement it with insights of recent sound perception research, (Fig. 1.) This will exploit existing synergies and overcome obvious fragmentation in research, methodology and basic as well as advanced acoustics training.

Providing interdisciplinary training and joining or exchanging methodology in research, is expected to have a strong impact on the skills of trained researchers as far as sound design capabilities, modelling accuracy, efficiency and applicable frequency range is concerned. Adding the understanding of human auditory perception will help to tackle the hard problem of sound quality parameters and to better understand stimulating effects on well-being and cognition of people exposed to sound, but also harmful effects, like annoyance or even deteriorating cognitive performance.

The ITN will provide interdisciplinary and intersectoral research training for excellence. It will structure existing PhD-level training in acoustics setting up European curricula with compatible and recognised courses offered by Universities and private enterprises. Simultaneously it will push the state of the art in vibro-acoustic modelling and in interdisciplinary design optimisation by initiating a joint research effort increasing critical mass. The complementary structure of the network will make it not to break apart after the ITN project period. It is rather expected that the methodologies used to analyse, design and optimise transport vehicles, rooms and musical instruments will grow together and will be further developed in an interdisciplinary joint effort.

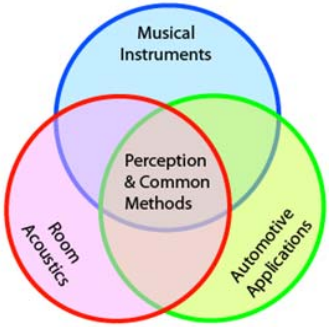

Fig. 1: BATWOMAN R&D scope.

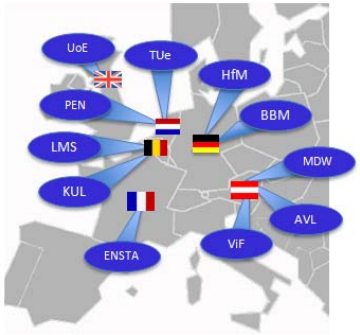

Fig. 2: BATWOMAN consortium.

CONSORTIUM: contains partners (6 universities, 1 research institutes and 4 companies) specialised in three specific application fields of acoustics: Automotive sector, room acoustics and musical instrument acoustics, see Fig. 2. The industrial partners bring in application knowledge and expertise, and the research partners bring in a range of engineering methodologies, the capability of PhD research training, provision of courses and dissemination of results.

COORDINATOR: ViF - Kompetenzzentrum - Das virtuelle Fahrzeug Forschungsgesellschaft mbH, http://www.v2c2.at/ in Graz, Austria. BATWOMAN Coordinator: **Dr. Michael Nöst**, Michael.Noest@v2c2.at

MARIE CURIE ELIGIBILITY CRITERIA – in short:

- **Early-Stage Researcher (ESR):** holds an MSc degree in Engineering and has less than 4 years of experience and has not yet been awarded a doctoral degree[1].

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Within BATWOMAN, MDW (http://iwk.mdw.ac.at) is looking for an ESR (duration 36 months) focusing on "Computer aided testing methods"

Objectives: Parameters of structural FEM simulations could conveniently be verified by means of time-resolved Electronic Speckle Pattern Interferometry (tr-ESPI). The ESR will develop new ways of image data analysis allowing to directly match tr-ESPI data with theoretical displacements predicted by 3D structural simulations (Computer Aided Testing - CAT). This task requires knowledge in applied optics, image processing and computer optimization.

Tasks and methodology: Setting up a parameterized physical 3D surface model of the vibrating test object. - Calculating theoretical ESPI patterns based on the model, taking past frames and some knowledge about the vibrating system into account. - Developing an objective function for computer optimization based on the adaptive matching between theoretical and experimental ESPI image sequences in order to reconstruct unknown model parameters.

Results: Algorithms and program code, - Benchmark cases,- Assessment of accuracy and performance.

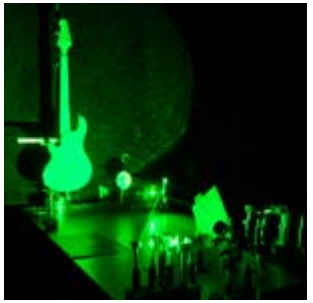
CANDIDATE PROFILE: All candidates must be fluent in spoken and written English. The research is highly multidisciplinary. An ideal candidate has an M.Sc. in engineering (e.g. mechanics, materials, electronics, physics), an adequate mathematical & computational background and he or she should at least have a strong interest in music. He or she will enroll in a PhD program at the University of Music, Vienna and receive in-depth training by the international network.

- Specific experience with simulation methodologies and software tools is an advantage.
- Knowledge in optics and acoustics of structures is highly welcome
- Knowledge of programming languages (C/C++, Fortran, Visual.Basic, ...) and/or knowledge of Matlab are an advantage.
- All members of the network are equal opportunity employers, both female and male candidates are invited to apply.

The research activities will mainly be carried out at Partner **MDW** located in **(Vienna, Austria),** possibly combined with research visits and/or short-term secondments to other members of the network.

APPLY NOW! Start date target: between January 1st and April 1st, 2014

APPLICATION: To apply, please send a **detailed CV** together with a **letter of motivation** and **names of reference(s)** to



Prof. Wilfried Kausel
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Univ. of Music & perf. Arts
Anton v. Webern Platz 1
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Austria

The remuneration will be in line with the Austrian Kollektivvertrag for University employees and the EC rules for Marie Curie grant holders and consists of a salary augmented by a net mobility allowance. http://cordis.europa.eu/fp7.

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[1] The research experience includes the period since gaining a university degree giving the candidate access to doctoral studies (the degree must entitle the holder to embark on doctoral studies, without having to acquire any further qualifications) or already in possession of a doctoral degree, independently of the time taken to acquire it. Among others, following criteria apply for eligibility:

- the researcher shall not be a national of the State in which the hosting partner's research team is located
- at the time of appointment, the researcher may not have resided or carried out her/his main activity in the country of the hosting partner for more than 12 months in the 3 years immediately prior to her/his appointment
- women are especially encouraged to apply.