EARS

Minutes of SB Meeting

Collaborative Project - EARS	
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C		Short description	

Revision	Summary of Changes	
	Reference	**Description**
A	All sections	First Draft
B	All sections	Final version (inclusion of amendments and corrections)

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Reviewer(s):	All Partners
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Date and time of the meeting (tele-conference): 26.01.2016 from 15:00 – 16:10 (CET)

Participants

- Walter Kellermann
- Heiner Löllmann
- Heidi Zinser (until 15:30)
- Patrick Naylor (until 16:05)
- Christine Evers
- Boaz Rafaely
- Vladi Tourbabin
- Verena Hafner (until 15:45)
- Guido Schillaci
- Radu Horaud
- Pierre Mesnil (representing Rodolphe Gelin, until 16:05)

Agenda

1. Opening
2. Approval of the Minutes of the previous SB meeting
3. Topics to be discussed
   - 3.1. Brief status report of each WP leader
   - 3.2. Risk monitoring
   - 3.3. Risk mitigation and follow up
   - 3.4. Additional topics
4. Date of next SB meeting

The agenda has been sent to all SB members by email prior to the meeting and is available on the EARS homepage.

Meeting Protocol

1. Opening

The Project Coordinator Walter Kellermann welcomed all participants and outlined the agenda of the Steering Board (SB) meeting. The attendees represented a quorum for decisions to be made during the SB meeting.

2. Approval of previous Minutes

The protocol of the previous SB meeting on Dec.15, 2015, has been approved by all participants.

3. Brief status report of each WP leader or its representative

WP 7: Management (Heidi Zinser, Walter Kellermann, Heiner Löllmann)

Planning of Review Meeting in April, 2016 (Walter and Heidi)

FAU (Heidi) has sent draft agendas for the Review Meeting and the preceding SB meeting and Technical Project Meeting in Berlin to all Partners. Boaz proposes to allocate a time slot for the discussion of research topics and collaborations. Therefore, it was agreed to start the meeting on Tuesday, April 5th already at 10:00 am to accommodate a SB meeting from 16:00 to 18:15, while the co-workers can work on the demos in parallel. Conference and workshop posters of EARS papers should be reused for 'decoration purposes' similar as for the Review Meeting in Grenoble, which also provides the opportunity to explain certain aspects and algorithms to the reviewers in more detail, if desired. However, this should not be announced as a poster session to avoid exaggerated expectations on the reviewers' side. The lunch break during the Review Meeting on Thursday, April 7, should be held at the meeting place to ensure holding to the time schedule.

Heiner outlined the plan to integrate all algorithms on a common hard- and software platform for the demos at the Review Meeting and the final prototype later on. An email detailing this concept has been sent to all Partners (on Jan. 21), but only IMPERIAL and BGU have responded so far. The main idea is to process the signals of the final 12-microphone channel prototype head on two laptop computers (communicating with each other) on which the algorithms of BGU, IMPERIAL, FAU and INRIA are executed. The processed data of these laptop computers are transmitted to Modularity running on the Nao robot where the algorithms of ALD and UBER are executed.

Radu pointed out that a fallback solution is needed for the case that algorithms operating with the new prototype head (version 2) cannot be implemented in time, since the new prototype head will be delivered to all Partners not before mid-February. A special concern is that the synchronization of video and audio data streams might not work with the new prototype head in the same way as for the current head, which would affect some of the algorithms of INRIA for audio-visual processing. Therefore, additional demos with the current 4-microphone heads should also be considered for the Review Meeting.

It was agreed that the drafted agenda for the Review Meeting on April 7, which was sent by Heidi to all Partners for approval on Jan. 25, can be sent to the PO Anne Bajart by FAU (done in the meantime).

Periodic Report

Heiner thanked all Partners for submitting their contributions for the technical part of the Periodic Report. He will check the report and ask for input where needed (done in the meantime). The Partners were reminded to check their dissemination activities as listed in Appendix G and H of the report (sent around via email on Jan. 15).

Heidi informed all Partners that their finance data needs to be entered in the EC Participant Portal by Friday 29.01.2016. To date, there is still no data entered for UBER.

Budget spending

Walter pointed out that the budget figures of INRIA stated in the SB Biannual Progress Report (M19-M24) show that INRIA will receive about 87% of the total EU contribution after M24 such that only 13% of the total EU contribution remain to cover the remaining tasks in the last project year (M25 - M36). Radu stressed that INRIA does not "claim costs" but "declares costs", and Heidi will correct this in the SB Biannual Progress Report where needed. INRIA's cost model has been accepted by the EC and INRIA's cost declarations have always been accepted by the EC in previous projects. In addition, Radu promised that INRIA will fulfill all its obligations in the EARS project. Once the Periodic Report (M13-M24), including the Management Part with the budget figures for each Partner, is completed, Walter as Project Coordinator will ask the whole SB for an approval before FAU submits the report to the EC (on Feb. 29, 2016 at the latest).

WP 6: Dissemination and Exploitation (Heiner Löllmann)

Special Sessions at EUSIPCO and IROS (Heiner)

A proposal for a Special Session on *Signal Processing for Moving Microphone Arrays* by Heiner and Boaz for the EUSIPCO 2016 in Budapest was accepted. In addition, FAU was asked to act as co-chair in a proposal for a Special Session on *New Horizon for Robot Audition Applications* for the IROS 2016 in South Korea (accepted in the meantime). The organizers are K. Nakadai, H.G. Okuno, H. Löllmann, G. Ince, H.-S. Ko, and J. Even.

WP 5: System Integration and Validation (Pierre Mesnil)

Prototype head

ALD sent a prototype head (version 2) to BGU on Jan. 18, which comprises the following features (as announced by Pierre in an email on Jan. 18):

- new microphones with integrated preamplifiers
- improved microphone fittings
- stereoscopic vision (new faceboard)
- upgraded loudspeakers (direct access possible)
- upgraded CPU.

BGU has received the new head and started to test it, which should be finished at the beginning of February. All parts for the final head production have been ordered by ALD to start the assembly of the heads immediately after receiving (and incorporating) the test results from BGU.

Software integration

Heiner pointed out that he currently leads, out of necessity, the activities for the integration of all algorithms on a common platform for the demo at the Review Meeting and the final prototype. However, this task actually is assigned to ALD as part of WP5 and ALD has more expertise for this task than FAU. Walter stressed the importance of this activity and that more manpower needs to be assigned to this task by Rodolphe if needed.

WP 4: Robot Embodied Cognition and Interaction (Verena Hafner and Guido Schillaci)

Scientific work

UBER is working on ego-noise suppression in the log-mel spectral domain and preparing a paper on this work. The achieved results should be compared with those obtained by the ego-noise suppression scheme developed by FAU (Antoine Deleforge). A Skype meeting to coordinate the collaboration of UBER and FAU on this topic was conducted by Alexander Schmidt (who continues the work of Antoine Deleforge at FAU) and Guido Schillaci in December 2015.

Data synchronization

The synchronization of audio and motor data is currently tackled by Guido, but it seems to be problematic to achieve this with the Modularity framework of the Nao robot. Walter stressed that the issue of signal synchronization is of vital importance for the demos and final prototype and should hence be pushed accordingly. Heiner will collect the material on this and arrange a separate meeting with the involved co-workers.

WP 3: Audio-Visual Disambiguation (Radu Horaud)

Scientific work & demos

INRIA is currently working on the implementation of their algorithms for audio-visual localization and tracking. They still encounter problems after a software update for their Nao robot and ALD supports INRIA in solving this problem. INRIA has sent their head with stereo-vision cameras to ALD and received a revised version where everything runs properly.

Christine and Patrick are coordinating the activities to integrate the work of INRIA on BSS into WP2. Israel Dejene from INRIA will visit IMPERIAL after the Review Meeting in Berlin to collaborate on the topic of source localization and tracking.

WP 2: Acoustic Scene Analysis (Patrick Naylor and Christine Evers)

Scientific work

Alastair Moore is working on pseudo intensity vectors. A paper about this work is in preparation and a demo should be shown at the Review Meeting. Christine is working on SLAM. IMPERIAL is working on papers for the Special Sessions chaired by EARS members at the EUSIPCO in Budapest and the DAGA in Aachen.

Radu agrees that the work of INRIA on BSS should be integrated into WP2 and Christine and Patrick should coordinate these activities (see also discussion on WP3). Ideally, it should be combined and at least compared with the work of FAU on signal extraction.

Review Meeting & prototype system

Besides a single real-time demo incorporating contributions of all Partners, some additional stand-alone demos should be shown at the Review Meeting to demonstrate also algorithms which are not running in real-time so far. IMPERIAL would like to show less complex versions of its algorithms running in real-time on the common demo platform and more advanced algorithms, which are currently too complex for a real-time implementation, in separate demos. Walter agrees on this concept as long as the integration of all algorithms on a common platform is clearly visible and the additional demos are not seen as a replacement

of the main demo platform. A visible switching of the algorithms should also be considered to demonstrate the achievements more clearly and to highlight the strengths and weaknesses of the developed algorithms in practice.

The activities until M30 should be focused on the implementation of the algorithms for the final prototype and their testing, and less on the development of new algorithms to ensure that the final prototype is properly finished in time.

WP 1: Embodied Acoustic Sensing for Real-world Environments (Boaz Rafaely and Vladi Tourbabin)

New prototype head

BGU is currently testing the final prototype head as discussed before (see WP5).

Scientific work

BGU is extending their head model for frequencies up to 8 kHz and an extension to even higher frequencies should be addressed in the future.

A paper for the Special Session at the EUSIPCO (chaired by Heiner and Boaz) is in preparation as well as two regular paper submissions for EUSIPCO. In addition, a paper for the Special Session on *Acoustic Signal Processing for Robot Audition* at the DAGA in Aachen is in preparation as well as a paper for the ICR 2016 in Herzliya (Israel).

3.2 Risk Monitoring

Delivery of the new prototype head to all Partners

The final prototype head (version 2) should be sent to all Partners until mid-February (according to the schedule agreed at the SB Meeting in Paris in November 2015).

3.3 *Risk Mitigation*

(none)

3.4 Additional Topics

(none)

4. Date of next SB Meeting

The next SB meeting takes place on Wednesday, Feb. 17 starting at 14:00 (CET). (A Doodle query to find a common date for the SB meeting in March has also been initiated by Heidi.)

Open issues and agreed actions

The list below contains open issues as registered at the time of writing this protocol. Finished issues and actions are not listed.

Open issues and agreed actions from SB Meeting Jan. 26, 2016				
Item no. / WP no.	Discussions	Action by /Due date	Responsible Person	Status

1 / WP 4	Synchronization of audio and motor data	asap	Guido Schillaci (UBER) with support by Heiner Löllmann (FAU)	Open
2/ WP 7	UBER: Entering of finance data for the 2nd period in the EC Participant Portal	29.01.2016	Verena Hafner	Open

Open issues and agreed actions from SB Meeting Dec. 15, 2015				
Item no. / WP no.	Discussions	Action by /Due date	Responsible Person	Status
1 / WP 7	Partners send demo proposals for Review Meeting to FAU	end of January	Heiner Loellmann (FAU)	Open

Open issues and agreed actions from SB Meeting November 2015				
Item no. / WP no.	Discussions	Action by /Due date	Responsible Person	Status
WP 2	Synchronization of the work on source localization between INRIA and IMPERIAL	asap	Christine Evers and Radu Horaud	open
WP 2	Work of INRIA on BSS needs to be integrated into WP2	asap	Patrick Naylor, Radu Horaud and Laurent Girin	open
WP 2/3	Integration of SLAM into the work of INRIA	asap	Christine Evers and Fabien Badeig	open
WP3	Incorporation of sound recognition system of ALD into WP3	asap	Alexandre Mazel and Sileye Ba	open
WP3	Videos for Review Meeting in collaboration with		INRIA	open

	ALD			
WP 4	Collaboration of UBER and FAU on ego-noise prediction and estimation	asap	Guido Schillaci and Antoine Deleforge	open
WP 5	Scenario needed with two robots?	asap	Heiner Loellmann (FAU)	open
WP 5	Synchronization of audio and motor data for the new prototype head	asap	Guido Schillaci (UBER), Silèye Ba (INRIA), Alexander Schmidt (FAU), Alexandre Mazel (ALD)	open
WP5	Improved prototype I head (version 1.1)	Mid-December	Rodolphe Gelin and Pierre Mesnil (ALD)	open
WP5	Fully functional prototype head (version 2.0)	Mid-January	Rodolphe Gelin and Pierre Mesnil (ALD)	open
WP5	Fully functional prototype heads delivered to each Partner	Mid-February	Rodolphe Gelin and Pierre Mesnil (ALD)	open
WP5	Videos for Review Meeting		ALD	open
WP6	Status of Book on Robot Audition	asap	Walter Kellermann (FAU)	open
WP6	Article in a robotics magazine		All Partners	open
WP7	Budget transfer from equipment to PM possible?		Heidi Zinser (FAU)	open

Open issues and agreed actions from SB Meeting October 29, 2015				
Item no. / WP no.	Discussions	Action by /Due date	Responsible Person	Status
1/WP 5	ALD sends new prototype head to the Partners	Mid of November	Rodolphe (ALD)	Open

Open issues and agreed actions from SB Meeting July 27, 2015				
Item no. / WP no.	Discussions	Action by /Due date	Responsible Person	Status
3/WP 4	Documentation of the work on the new ego-noise model to ease the collaboration with FAU	n.a.	Verena (UBER)	Open

Open issues and agreed actions from SB Meeting April 14, 2015				
Item no. / WP no.	Discussions	Action by /Due date	Responsible Person	Status
1 / WP 5	ALD will send modules for speech dialog to all Partners.	n.a.	Rodolphe Gelin (ALD)	Open
4 / WP 7	Proposals and ideas for follow-up project	Next SB meeting	All Partners	Open

Open issues and agreed actions from SB Meeting Jan. 17, 2015				
Item no. / WP no.	Discussions	Action by /Due date	Responsible Person	Status
1 / WP 5	ALD will send Nao head with improved loudspeakers to FAU for measurements.	Upon delivery of the new loudspeakers to ALD	Rodolphe Gelin (ALD)	Might not be possible since no redesign of the loudspeaker system intended by ALD