KEEP 3 Partnerships

Launch Document

Company:	Sedgewall Communications Limited, Dunstable, Beds.
University:	University of Hertfordshire
School/Department:	Electronics, Communications and Electrical Engineering
Date:	26th January, 2009
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REMINDER OF THE PURPOSE AND ETHOS OF KEEP PARTNERSHIPS

Knowledge Partners East of England (KEEP 3) partnerships are established between companies and organisations in the knowledge base and employs a young graduate as the "agent of knowledge transfer". The three essential elements include:

- transfer of knowledge from University to Company;
- provide industry based training for graduate;
- enhance levels of research and training in University.

Commitments

- Benefits can be substantial and are directly related to the level of commitment.
- Agenda for all three parties (Company, Academic and Associate).

ROLES OF UNIVERSITY, COMPANY AND ASSOCIATE

Company

- provides environment for Associate to develop professional skills;
- provides the programme focus;
- has the financial commitment.

University

- academic committed to half day per week on average;
- provides access for project and Associate to University expertise and facilities;
- provides support for Associate.

Associate

- agent of technology transfer;
- technically employed by University but works mostly on company premises;
- monthly meeting with project team (Associate and Supervisors);

DEFINITIONS

- *KEEP 3* **Partnerships** are the rapid development knowledge transfer scheme in the Eastern Region of the UK and is supported and financed by EEDA (East of England Development Agency).
- *KEEP 3* **Partnerships** are managed by a Management Group consisting of a consortium of 11 Higher Education Institutes (University of Bedfordshire, Anglia Ruskin University, University of Hertfordshire, Writtle College, Norwich School of Art and Design, the Open University, Cranfield University, Cambridge University, Essex University, the Royal Veterinary College and the University of East Anglia) and the scheme is administered by the Anglia Ruskin University.
- The partnerships are called **KEEP 3 Partnerships**.

- *KEEP 3 Associates* are the graduates that undertake the projects.

ASSOCIATE RECRUITMENT

Arrangements for recruitment of the Associate are made through the School/Department. This includes drafting the advert, job description and additional information. The Knowledge Transfer Team will help co-ordinate this activity.

The advert will then be placed on-line in Jobs.ac.uk, i10's GradsEast web-site as well as trade press where appropriate. Following a minimum two-week closing date, short listing and interviewing will be organised.

On appointment, each Associate will be expected to visit the Personnel and Payroll offices in the University to make the appropriate arrangements.

The short listing and interview panel is usually made up of the company supervisor, the academic supervisor and a member of the Knowledge Transfer Team.

ASSOCIATE INDUCTION
It is usual for Associates to report to the Company on their agreed start date, and carry out their induction to the Company during the first week. During this time the Academic supervisor should visit to make arrangements for their induction to the University. Arrangements should also be made by the Academic for the Associate to obtain a staff card (through Personnel) and for their induction in the School/Department.

APPRAISAL
It is recommended that both their academic and Company supervisors appraise Associates at the 2 and 5 -month stage of the project. If the Company have other appraisal systems in place, the Associate can be appraised under this system.

CONFIDENTIALITY/IPR
A collaboration arrangement (if necessary) should now be in place between the Company and the University. The Company are entitled to ask the Associate or any other member of the Local Management Committee (LMC) to sign a confidentiality agreement.

FINANCIAL ARRANGEMENTS
The University is responsible for maintenance of the Partnership budget. The financial statement (see page 7) will be presented at each LMC meeting by the Academic Supervisor. All items of expenditure will be detailed and a forecast of future spending will also be provided.

The Company Partner will arrange for a Standing Order or Direct Debit Mandate to be set up with the University where their contribution to all the project costs will be pro-rated over the length of the project. Invoices, from the University, will be sent out quarterly in arrears or as arranged locally to cover the costs of the Programme. These will be divided on a pro-rate basis and at the end of the project reconciliation will be done to make any necessary adjustments.

It is possible to vire money between the all of the budget headings where appropriate. These totals will be monitored and appropriate action taken by the Local Management Committee if necessary.

Please note that if the budget is overspent, the company will be liable for 100% of the overspend. For example, if it is forecast that the salary budget will be overspent, the extra will be invoiced on a pro rata basis over the 6 months and reconciled at the end of the project.

ALL budgeted expenditure over an agreed limit must be justified, agreed and authorised by the LMC. This can be done by email if more convenient. Other lower levels of expenditure must be agreed with the academic and company supervisors. **ALL** training & development course fees and large travel costs **SHOULD** be through the Faculty Finance Office at the University. Only under exceptional circumstances can the Company Partner make such purchases and invoice the University accordingly.

PROJECT MANAGEMENT

Local Management Committee (LMC)

Meets every 2-3 months and is administered by the Knowledge Transfer Team. The KT Team will provide the secretariat for the LMCs. This Committee reviews the programme of work and assess the progress of the Associate. Future work plans will also be approved and it is at this meeting any changes in the direction of the Programme should be discussed and approved. A log of benefits will be kept and expenditure will be considered and authorised.

Bi-monthly Project Update

A report on the progress of the project is required every 2 months. This should be in the form of a 1 page (maximum) written summary and emailed to the KEEP 3 Manager for presentation and review at the Bi-monthly Management Group meeting. The report should be written by the Associate and edited by the academic and Company supervisors.

Steering Committee Meeting

This meeting is usually convened once a month and should be arranged and minuted by the Associate. The project supervisors and the Associate attend this meeting and it is usually held on the Company premises.

Project Meeting

An informal meeting should be held once a week and attended by the project supervisors and the Associate. The Associate should circulate action points, if necessary.

FINAL REPORTS

At the end of each Programme a final report, in the form of a case study must be submitted – with contributions from the Company and University partners and the Associate. All financial information will be provided by the Faculty Finance Officer and the report must be submitted no longer than **TWO WEEKS** after the end of the Programme.

PARTNERSHIP DETAILS

What expertise will the University bring to the proposed Partnership? Who will be the lead academic? What qualifications and experience will the Associate require? How will this complement the expertise of the Organisation Partner?

The University has extensive experience and expertise in its School of Electronics, Communications and Electrical Engineering (ECEE) in areas of digital signal processing (DSP) which are most relevant to the proposed project. These areas include statistical signal, audio and speech processing, speech enhancement, and noise cancellation. These fields of expertise have been developed through several years of research and collaborative work with a number of industrial partners including BT Labs and Fulcrum Technologies Ltd. Additionally, the University can provide expertise in implementing DSP algorithms using digital signal processors. The University has had previous collaboration with Fulcrum which is part of Sedgewall Communications Group. An example of this collaboration is the joint project undertaken as part of the DTI NWTM Programme between 2003 and 2006.

Dr Aladdin Ariyaeeinia will take on the role of Lead Academic. He has several years of research experience in speech and audio processing and noise cancellation.

The Associate is required to possess the following qualifications and experience:

- First class or upper second class degree in electronic engineering or a similar discipline
- Working experience in the areas of digital signal processing and audio/speech processing
- Familiarity with digital signal processors, micro processors, and high-level programming languages such as Matlab, C++ and C#
- Self-motivated, enthusiastic, and good team worker
- Excellent communication and time management skills

Due to rapid advances in the field of audio processing in recent years, the Company is currently experiencing a number of technical challenges in enhancing their digital audio technology and extending their capability in this area. The programme of work undertaken by the Associate's (under the guidance and supervision received from UH) is envisaged to complement the existing expertise within the Company, and thereby provide an effective means for meeting the current challenges. This will not only facilitate the Company's efforts in maintaining their marked position in the field, but will also help them to explore new market opportunities through the extension of their product range.

PROGRAMME DETAILS

Describe in 25-50 words the work to be carried out in the proposed Partnership and its purpose.

To investigate and embed appropriate audio enhancement methods for:

- effective reduction of in-band noise in speech, based on estimating the noise content;
- automatic control of the audio signal amplitude received over a communication channel to an acceptable level.
- Detection and appropriate attenuation of undesired sharp sounds received through audio communication channels

What challenges within the Company Partner will the proposed Partnership address and what opportunities will it promote?

Challenges:

1) Currently, the company does not have an integrated solution to audio enhancement in communications, which is a growing market requirement.
2) The company's limited capability in real-time controlling of the amplitude and undesired content of audio received through communication channels.
3) The development of a cost effective solution to enhance the competitiveness of the company.
4) The required restriction on the physical size of the product.

Opportunities:

1) Strong in-house technical capability in the areas of investigation which are of considerable value to the future developments within the company.
2) Provision of opportunities for exploiting new market areas
3) Expanding customer base within the UK and overseas.

What are the Project objectives?

Objectives:

The overall aim is to move towards a cost effective audio enhancement product for deployment within communication applications. The objectives can be summarised as:

1) To carry out a critical analysis & optimisation of the existing audio enhancement solutions within the company.
2) To develop a versatile calibration procedure for the deployment of the noise cancellation method with the commonly used headsets within the market.
3) To investigate methods for controlling the amplitude and undesired content of audio received through communication channels.
4) To investigate appropriate approaches for recording the processed audio streams for the subsequent evaluation.
5) To investigate methods for monitoring the audio enhancement process through a graphical user interface.
6) Documentation: To appropriately document the technical work carried out, and to produce appropriate Guide Notes/User Manuals for the systems developed.

PROGRAMME BUDGET STATEMENT

The table below identifies the budget items identified and agreed between the University and the Company.

Item	Rationale	(£)
Recruitment, training, travel & subsistence	Advertising costs, software training plus travel costs	1,312.50
Equipment	Laptop computer + software	437.50
KB support – academic & admin	Average of up to 0.5d per week contact at Company + Technical support, financial administration	5,031.25
Graduate Salary	1 x FTE	12,468.75
	Total	19,468.75
Company contribution		**8,750**
Grant (EEDA funding)		**10,718.75**

NB – Company contribution is exclusive of VAT

LMC Membership

Role	Member	Notes
Chairperson	Dr Abi-Olyseye Abiodun	• Chairs meeting and reports on any changes in the Company and its management, which will impact on the Partnership. • Ensures consensus on any proposed programme changes is achieved • Suggests changes to project plan as appropriate after seeking agreement at LMC
Academic supervisor & support	Dr Aladdin Ariyaeeinia	• Academic Supervisors should spend on average half a day per week on the project. • Arranges access to University facilities for Associate • Ensure that the University makes appropriate arrangements to enable Academic Supervisors to fulfil their commitments. • Ensure provision of necessary academic support to the Programme • Offers support to Associates with regard to professional development. • Responsible for preparation and submission of financial statement • Responsible for sending copies of minutes of LMC meetings to the Business Partnership Office (preferably within 2 weeks of each meeting).
Company Supervisor	Dr Abi-Olyseye Abiodun	• Responsible for day to day management of project and supervision of associate • Reports on company benefits. • Normally Company person, coordinates actions of participants, liaises closely with academic supervisor, Informs members of LMC how the work is generally progressing against the original proposal • Suggests changes to original workplan as appropriate after seeking agreement at LMC
Other support	Knowledge Transfer Team	• Liaise closely with all partners • Provides arbitration between parties, if necessary • Responsible for providing secretariat support. Secretary to ensure that agendas and all papers are sent to members about one week prior to the LMC meeting dates. • Provides KEEP 3 Manager as part of LMC • Ensures the Partnership makes progress towards objectives. • Reports to the Management Group at Bi-monthly meetings. • Advises on the rules and procedures relevant to KEEP 3. • Encourages best practice in knowledge transfer.
Associates	*Dr Richard Edwards*	*Associates are members of the LMC but do not have voting rights. They report on technical progress and personal development.*

CHAIRMAN'S BUSINESS

A short **VERBAL** statement confirming that the Partnership objectives are still valid and a brief statement on any events in the Company which may affect the Partnership, e.g. new staff, new business, purchase of new equipment, change in direction of the business, changes in ownership or management.

ASSOCIATE PRESENTATION

The Associate presentation should last for **about 15 minutes**, and address all the headings listed on the agenda.

UNIVERSITY REPORT

This half page **WRITTEN** report should state what progress has been made. Mention should also be made of any additional benefits that may have accrued. These benefits may be to your Department and/or the University as a whole through the Partnership. Points to consider are:

- Case studies
- Papers/publications produced
- Networking with other Depts/Companies

- Personal development
- Follow up studies in the Department - new areas of expertise
- Undergraduate & postgraduate research projects

- Conference/Seminars attended

COMPANY REPORT

This half page WRITTEN report should state what progress has been made to achieving the company objectives, as stated in the original Proposal or updated work plan. Mention should also be made of any additional benefits that may have accrued. Points to consider are:

- Changes to products or processes that have resulted in savings
- New or alternative thinking or procedures
- You have more time to devote to other duties

- Usefulness of documentation produced by Associate
- Assistance from academic grant holders and other University staff
- Use of resources and facilities at the University

- Networking with other Departments and companies
- Student Project
- Conferences and seminars (information brought back to the company through Associate, Academics etc)

FINANCE REPORT

The budget statement will be reviewed with respect to virement between headings, and expenditure for the next period, authorised and minuted. An updated statement will be circulated with the minutes.

KEEP MANAGER'S REPORT

Short **ORAL** report on, for example, further opportunities available with the KEEP 3 scheme.

TYPICAL AGENDA

Local Management Committee Meeting of the KEEP 3 Partnership between Sedgewall Communications Limited and the School of Electronics, Communications and Electrical Engineering, University of Hertfordshire

To be held at Sedgewall Communications Limited, Dunstable on ????? at ????

1. Welcome by Chairman

2. Apologies for absence

3. Minutes of the previous meeting

4. Matters arising from the previous minutes

5. Chairman's Report*
   (a)   Confirmation of KEEP 3 Partnership objectives
   (b)   Company developments affecting the project

6. Associate report*
   (a)   Project progress
   (b)   Proposed plan for next 3 months and commitment of resources

7. Company Report
   (a)   Progress towards Company objectives

8. Finance report*

   (a)   Budget review
   (b)   Authorisation of expenditure

9. KEEP 3 Manager's report*

10. Any other business

11. Date of next meeting

12. Reserved business

ORIGINAL WORKPLAN

Proposed Project work for the Graduate

Task no.	Task description (where appropriate, please state *how* the task will be carried out)	Effort (person weeks)	Cumul. Effort (person weeks)	Deliverables (in terms of contribution to the operation of the company partner or decision points **O = Output, DP = Decision Point**)
1	Induction	0.5	0.5	UH and Sedgewall Communications induction completed
2	Critical review of the state-of-the-art methods for speech enhancement. Associate to use ECEE and Learning Resource Centre facilities at UH.	2.5	3	**O1 -** Report on the relative usefulness of different noise reduction methods for the application considered. **DP1 –** Agreed and signed off by Supervisors
3	Experimental evaluation and optimisation of the Company's existing noise reduction system.	3.5	6.5	**O2 -** Documentation of the characteristics and performance of the existing speech enhancement system. Reviewed and approved by Supervisors
4	Development of a versatile procedure for the calibration of the deployment of the existing speech enhancement method with commonly used headsets.	5	11.5	**O3 -** Design of the calibration procedure and documentation completed. Approved by Supervisors
5	Investigations into an appropriate approach to recording the processed audio streams	2	13.5	**O4 -** Report on the outcomes of the investigations including the description of the proposed approach. Approved by Supervisors
6	Development of a Graphic User Interface (GUI) for monitoring the audio (speech) enhancement process.	4	17.5	**O5 -** GUI system designed, constructed, and tested. The required interface with the audio system developed. **O6 -** Report on the structure, characteristics and operation of the GUI-based monitoring system. Reviewed and approved by Supervisors
7	Investigations into effective methods for controlling amplitude and undesired characteristics of audio received through communication channels	2	19.5	**O7 -** Report on effective methods for protecting the recipients of audio (e.g. call centre operators) through communication channels
8	In-house training of staff and full documentation of the new systems developed	1	20.5	**O8 -** Final report to include: details of various aspects of the work carried out, descriptions of the systems developed, system calibration, and user manuals.
9	Leave entitlement	1.5	22	

Part 4 – Joint Commitment Statement

This part must be signed by two senior personnel, one from the organisation partner and the other from the university. They must be empowered to commit their organisations to support the proposed KEEP 3 programme.

We have read and understood the Guidance Notes below for prospective partners completing an Application Form. We agree that if this KEEP 3 proposal is approved:

4.1. The KEEP 3 programme will be carried out in accordance with the proposal contained in this document. Significant changes to it will have to be agreed by the KEEP Local Management Committee (LMC).

4.2. The Graduate will be recruited jointly by both partners and offered an agreed contract of employment by the university. The Graduate, known as the Associate, will work mainly on the premises of the proposed organisation partner and follow the normal practices of the partner organisation regarding confidentiality, attendance and leave. Their salary level will be agreed by both partners. The Graduate's contract cannot be terminated without adequate consultation between the partners.

4.3. The partnership will hold regular LMC meetings to include representatives of the university, the company and the Graduate to review progress against deliverables as agreed. These will be held at intervals not exceeding three months.

4.4. The staff member(s) from the university will spend, on average, up to half a day a week per Graduate during the period of the KEEP 3 programme on knowledge transfer activities typically at the premises of the partner organisation identified.

4.5. Both partners will commit all reasonable resources to enable the successful completion of the KEEP 3 programme.

4.6. All equipment and/or associated software purchased for the project is the property of the university.

4.7. The partner organisation must complete a final report in the form of a case study (Appendix 4) for publicity and dissemination with pictures and other images as agreed and in accordance with the company/university legal agreement (3.2/3.3).

4.8. The partner organisation will pay the university an agreed financial amount to offset the costs incurred by the university in taking part in the KEEP 3 programme, as set out in the budget for the programme (3.7). This will be on receipt of invoices from the university.

4.9. If the KEEP 3 programme is terminated prematurely by the partner organisation, that partner organisation will be liable to pay to the university its share of any expenditure incurred or committed by the university, no matter whether that expenditure was incurred by the university before or after the date of termination.

Signed on behalf of university	Signed on behalf of the organisation partner
Name **Mr Brian Robinson**	**Name** **Dr Abi-Oluseye Abiodun**
Signature	**Signature**
Position **Head IP and Contracts**	**Position** **Head of Research and Development**
Date	**Date**