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## DESIGNING A MULTI-PURPOSE MONITORING STATION

### An Innovation for the Secondment into Knowledge Project

### 1. A Multi-Purpose Monitoring Station

The station will be the result of bringing together contributions from *3D Metrics* as an SME and the *Department of Computing. Communications Technology and Mathematics* (CCTM) of the *London Metropolitan University*.

The *3D Metrics* contributions consist of
   a. software to visualize and forecast multi-dimensional data
   b. access to an intelligent sensor or 'weather nose' that records 24 gases of air quality
   c. access to representative and significant climate data
while contributions from CCTM are
   a. technical expertise in electronics, computing and server side programming
   b. experience in comparative research based on measurements
   c. expertise in testing the usability of software
   d. access to a 'sky scanner' that measures luminance and chromaticity.

Through the collaboration a new commercial product will be designed: a monitoring station that records and visualizes the qualities of air and light. Using CCTM's sky scanner for light and *3D Metrics'* sensor for air, data is recorded at particular time intervals. Using *3d metric* software, new correlations between physical and chemical properties can be examined and a product can be marketed that measures the quality of smaller and larger environments.

The *3d metric* prototype software demonstrates the visualization and projections of multi-dimensional data. By embedding the software into a monitoring application, its commercial value can be increased substantially.

### 2. Benefits brought to business

• *Increased profitability and efficiency*
A monitoring station that demonstrates the usefulness of the software will increase dramatically the marketability of current prototype software and thus the chances for profitability of the company.

• *Development of new products, processes and services*
Besides integrating two hardware components into one functional station, an essential part of the project is the development of web interfaces for accessing the software. This will allow customers to choose their subscription service: a fixed fee for a defined amount of data or 'pay as you go'.

• *Environmental improvements*
The monitoring station measures the quality of outdoor environments while the software will also be used to evaluate publicly available climate data. The combination of station and software is therefore a tool to monitor the deterioration or improvement of environments over time and could thus become quite a desirable product – especially to assess environmental qualities in London.

- *Jobs created and / or retained*

*3D Metrics* is currently working with unpaid 'women returners' who expect to be paid as soon as the company can afford to do so. By creating a software subscription service and a monitoring station, the women can be retained and additional jobs for sales and marketing could be created if they can be funded.

## 3. Wider benefits

- *Community*

Because of its innovative and environmental value, the monitoring station will attract a lot of attention to the community around the University and in Greater London.

A new web community will be created by using climate data as a window to a shop that sells the re-visualization and re-interpretation of any kind of numerical data.

- *Students and researchers*

Students will be the first to be asked to use the station and the software on the web. Finding new correlations on the physical and chemical levels is expected to be of great interest to both students and researchers. New research projects are anticipated to emerge and get formulated from any number of unforeseeable applications.

- *Voluntary and non for profit sector benefits*

Anybody interested in climate change may contribute and participate in the [www.3dmetrics-climate.info](www.3dmetrics-climate.info) portal that is planned as an open door to a wide community of NGOs and third sector groups. By publishing the results of one or more monitoring stations on the web it is expected to get many voluntary and non for profit organisations involved in climate change and environmental qualities.

## 4. Strategic links of dept / academic with relevant industry sector

Taking research experience with hardware and software to the market is strategic for placing students into jobs and for smoothing the transition from study to work.

By fostering the collaboration with a women-only SME from the design stage of a new product, appropriate business processes and models can be prepared for growth and sustainability on a commercial as well as research level.

## 5. Evidence of need for KB expertise

- *Explanation as to why the KB partners is the best option to achieve the outcomes*

London Metropolitan University has a wide range of expertise related to the area of this project. Especially the Department of Computing, Communications Technology and Mathematics (around 110 academic staff and over 3000 students) demonstrates the breadth of experience that becomes accessible through the secondment. With its emphasis on increasing its relevance to commerce and industry, an ideal platform is created for a Secondment into Knowledge project.