

Grant agreement no: 317803

**MId- to NEaR infrared spectroscopy for improVed medical  
diAgnostics**

**MINERVA**

**Deliverable D10.8  
Project video**

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Start date of project: 01-Nov-2012

Video online: 17-Nov-2013

Date of issue: 07-Jan-2014

Due date: 31-Oct-2013

MINERVA Ref: MINERVA\_VIV\_080\_A\_WP10

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<i>Project co-funded by the European Commission within the Seventh Framework Programme</i>		
<i>Dissemination level</i>		
<b>PU</b>	<b>Public</b>	<b>X</b>
<b>PP</b>	<b>Restricted to other programme participants (including the Commission Services)</b>	
<b>RE</b>	<b>Restricted to a group specified by the consortium (including the Commission Services)</b>	
<b>CO</b>	<b>Confidential, only for members of the consortium (including the Commission Services)</b>	

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## Change register

Version	Date	Author	Organisation	Changes
A	07-Jan-2014	Bruce Napier	Vivid Components	Initial

## **1. Statement of independence**

The work described in this document is genuinely a result of efforts pertaining to the MINERVA project: any external source is properly referenced.

Confirmation by Authors:

Bruce Napier

Jason Buckley

Mark Farries

Vivid Components

Vivid Components

Gooch & Housego (Torquay)

## **2. Executive summary**

A video (3 min 19 s) has been made to promote the MINERVA project. The video gives a high level overview of the background for a non-technical audience with contact information for deeper technical enquiries.

The video is available on YouTube (<http://www.youtube.com/watch?v=6HQdjGLSyJo>), and there is a link from the MINERVA website homepage ([www.minerva-project.eu](http://www.minerva-project.eu)).

### 3. Introduction

This video is the result of a collaborative effort between several MINERVA partners. The development process for the video was as follows:

- An outline script was prepared by Jason Buckley (Vivid Components) in May-2013 (MINERVA\_VIV\_049\_A\_WP10 Outline content for video D10.8).
- This was developed to a full script by JB with Bruce Napier (Vivid) and Mark Farries (G&H) (MINERVA\_VIV\_049\_C\_WP10).
- An updated version of this document (MINERVA\_VIV\_049\_D\_WP10) was circulated to key members of the consortium for comment 27-Aug-2013. This final version (E) was used for the script.
- JB visited G&H (Ilminster) on 11-Oct-2013 and undertook the filming using Vivid equipment. MF was the narrator/ presenter, with assistance from several others at G&H, including Jon Ward.
- JB edited the video in Oct/Nov-2013. This included using some stock healthcare images and music, with some input from Gavin Lloyd (GNFT)
- Draft video was sent to key MINERVA partners for comment 12-Nov-2013.
- Several minor changes were suggested by the consortium.
- Final version was made public 17-Nov-2013. The link was put on the MINERVA website, and a notice has also been sent out on the project RSS feed.

The video (3 min 19 s) promotes the MINERVA project, giving a high level overview of the background for a non-technical audience with contact information for deeper technical enquiries.

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#### **4. Guiding Principles**

The video had the following guiding principles:

- It will provide a concise, understandable and interesting introduction to the MINERVA project for an audience described as 'the man in the street'.
- It must be sensitive to the audience who may themselves be undergoing testing for cancer, or have relatives suffering from the disease.
- It will consist of a single video, in English, of around 2 to 4 minutes duration which will be hosted on an existing public-facing web site.
- It will raise awareness of the project, the consortium method of delivery, and the EC funding mechanism, Framework 7.
- It will assume very limited scientific knowledge on behalf of the viewer.
- It will direct viewers towards the project web site, but will include no other call to action.

#### **5. Planned Outline Content**

The video is to consist of a series of interlinking shots, consisting of a combination of static photographs, graphics and video. A voice-over will run for the duration of the video (except the first section), providing a structured explanation of the project, backed up by the visuals.

The proposed video content will be split into a series of sections for the purpose of production. The transitions between these will be smooth and not made obvious to the viewer. Each of the sections is described below. Note that the 'Message' is not intended to reflect the actual script, but more the direction of the message to be conveyed.

##### **5.1. Section 1: Lead-In**

- Aims: To grab the attention of the viewer, to relate the purpose of the project directly to them and their families.
- Message: One in four Europeans will die of cancer. Although early diagnosis greatly improves patient outcome, accurate testing is currently difficult, time-consuming and costly. The MINERVA project is striving to change this, by improving diagnosis it aims to improve cancer survival rates.
- Visuals: Plain white text on a black background. No background audio. A series of short sentences appearing one by one for the duration needed to read them.

##### **5.2. Section 2: Human Face and The Status Quo**

- Aims: To give the project a human face. To give credibility to this project representative by showing a person and their job title. To create a closer relationship with the viewer by showing a passionate, qualified speaker. The speaker should be in some way closely associated with the diagnosis of cancer.
- Message: To diagnose whether someone has cancer or not, most current methods require a sample of their tissue. This is then examined under a microscope by an expert. Although the best available technique, the judgement is

subjective (even experts often disagree) and not as reliable as it could be. Results become more reliable as the cancer becomes more advanced, but delaying treatment reduces its effectiveness. Also, invasive surgery of some level is always required to obtain the sample, even to test the skin. The overall process can be painful for the patient, diagnosis takes days as samples have to be sent to labs. This increases anxiety for the patient and their family, and the process is expensive for health institutions.

**Visuals:** Speaker shown directly on camera in a lab or health care setting, ideally alongside the equipment and staff used to currently diagnose cancerous cells. Overlay on lower part of screen with their title.

### 5.3. Section 3: What MINERVA will do

**Aims:** To sell the benefits of the MINERVA project. To paint a picture of the future in which MINERVA has been a success.

**Message:** Imagine a future where a suspect area of skin could be painlessly scanned and within minutes a reliable, objective diagnosis made. Survival rates would increase, hospital costs would decrease as skilled staff are released for other duties, and perhaps most importantly, anxiety and pain for patients and their families would be better managed. The MINERVA project is working towards making this new future a reality.

**Visuals:** A montage view of video shots. A patient walking into a hospital with their partner. The patient discussing the potential issue with a doctor or nurse. Their arm being scanned. The results being displayed on a computer or report. A medical practitioner inspecting the result and relaying the news to the patient.

If suitable actors and locations are not available for these shots, then close-up photographs could be taken.

### 5.4. Section 4: The Technical Part

**Aims:** To make it obvious that a very high level of technical expertise is required in the project. To explain the fact development of a variety of components and techniques is required. To clarify the fact that the project will conduct cutting-edge research and development. To lead into the following section on the consortium.

**Message:** MINERVA will develop a new technique for cancer diagnosis. It will shine a form of invisible light from a source known as a 'supercontinuum' onto the sample. The supercontinuum light, like visible white light, contains a spread of wavelengths. By analysing which wavelengths are absorbed and which are reflected, it is possible to work out the types of biochemicals present, DNA, Collagen and so on. This technique alone isn't enough to give a reliable diagnosis. However, an analysis can also be made of how these chemicals are physically distributed in the sample. MINERVA will further develop both of these methods, and will also combine the two sets of results to create a far more accurate diagnosis. If this can be achieved, the project will have made a breakthrough in diagnostic technique. The project will investigate both non-invasive skin tests (point and shoot), and automated lab tests of biopsy samples for non-skin tests.

In order to do this, a range of components need to be developed and tested: new supercontinuum sources, new optical fibres and related components, new detectors and computer programs.

**Visuals:** Graphic showing the basic components required: the source, guiding fibre, detector and computer. Graphic demonstrating the wavelengths of supercontinuum light shone at a sample and those reflected, with an indication which materials the marker peaks represent. Graphic of a test sample illustrating the physical distribution of biochemical material. Graphic showing these two sources of information being combined by MINERVA which generates a resulting output. A visualisation of the resulting output will be displayed.

#### **5.5. Section 5: The Consortium and Funding Mechanism**

**Aims:** To explain that a collaborating consortium of leading European health care, research and industrial establishments are delivering MINERVA. To reinforce the message that the collective expertise of these businesses is needed to ensure a rapid development of the technology. To explain that the project is mainly funded by the EU and will deliver over a 4 year period.

**Message:** This type of optical technology requires a series of interacting components to work correctly. In turn, each component needs a particular specialism. The project's success will be achieved through drawing together a consortium of leading-edge research, development and production companies. The EU's Framework 7 is a funding mechanism designed to ensure Europe's continuing technological competitiveness, and has chosen to support project MINERVA with significant funding.

**Visuals:** Graphic of northern Europe with the project participant logos and names overlaid one after the other. EU Framework 7 logo overlaid throughout.

#### **5.6. Section 6: Lead-Out and Direction to Web Sites**

**Aims:** To repeat the key message that MINERVA is striving to make a breakthrough in cancer diagnosis, to save lives and to free up valuable medical resources through automation. To thank the viewer for watching. To direct the viewer to the MINERVA project website for further information.

**Message:** MINERVA is seeking to develop a breakthrough method of medical diagnostics for reliable and rapid cancer diagnosis. For the latest information, or to make contact with the project, please refer to this website.

**Visuals:** Video of the original speaker re-iterating the purpose of the project, fading to a final graphic with the project website and Framework 7 website.

## **6. Script and screen shots**

The section lists the dialogue to be spoken during the video. Normally, each sentence is spaced with a short pause, to enable them to be more easily aligned with any supporting graphics and video.

### ***Script for Section 1: Lead-In***

"One in four Europeans will die of cancer."

"Early diagnosis greatly improves patient survival rates, but accurate testing is currently difficult, time-consuming and costly."

"The MINERVA project is striving to change this."

"By improving medical diagnostic methods, MINERVA aims to dramatically improve cancer survival rates."

### ***Script for Section 2: Human Face and The Status Quo***

"Using today's methods, if you're suspected of having cancer, a sample of your tissue is needed."

"An expert will then look at it through a microscope, and decide whether it is cancerous or not."

"This is the best approach currently available to us."

"However, it can be painful, and time-consuming. Results may take weeks to come back."

"It is also subjective. Even two experts don't always agree, since healthy and cancerous cells look very similar."





### **Script for Section 3: What MINERVA will do**

"Now imagine a different future."

"In this future, an area of suspect skin is painless scanned."

"Within minutes, a reliable diagnosis is made and the results given to you."

"The anxiety to you and your loved ones would be dramatically reduced."

"Diagnosis times would be cut, and survival rates would increase as treatment becomes more effective."

"Costs to medical institutions would also be reduced, allowing the funds to be invested in other areas."

"The MINERVA project is working to make this new future a reality."

### **Script for Section 4: The Technical Part**

"To make all of this happen, a significant technical challenge must be overcome."

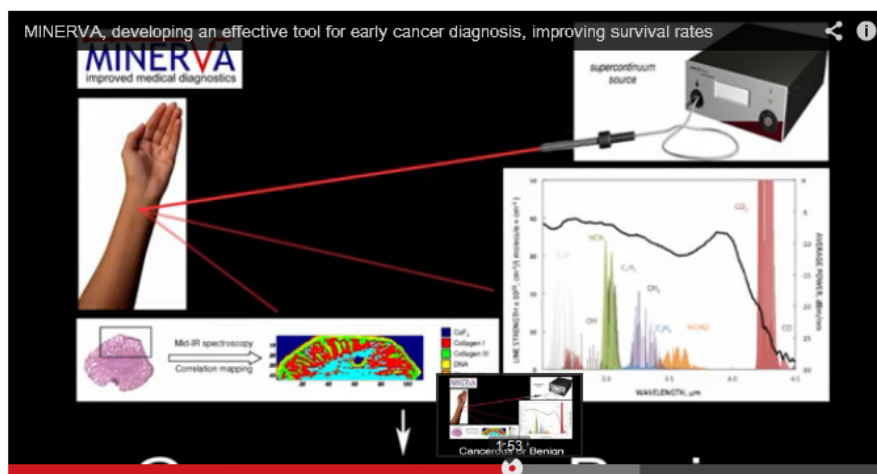
"Two new forms of diagnosis method need to be developed."

"Both methods use a source of light called a 'supercontinuum', which is shone onto the tissue sample to be tested."

"The first method looks at the reflected wavelengths of light and works out which biochemicals are present, such as DNA, proteins and collagen."

"The second technique uses the same reflected light, but this time looks at way the biochemicals are distributed within the sample."

"In order for both techniques to give the best possible results, a wide range of supporting systems also need development."



"These include new supercontinuum light sources; present ones are basic, and not bright enough."

"They will also be designed to be focussed on a specific area of skin, or even delivered into the body via optical fibres. By using fibres it would be possible to test not only skin, but also

internal samples without invasive biopsy surgery."

"New detectors are required to gather the reflected light, along with new types of fibre optic components."

"Finally, new computer models have to be designed and built to combine the results of the two techniques."

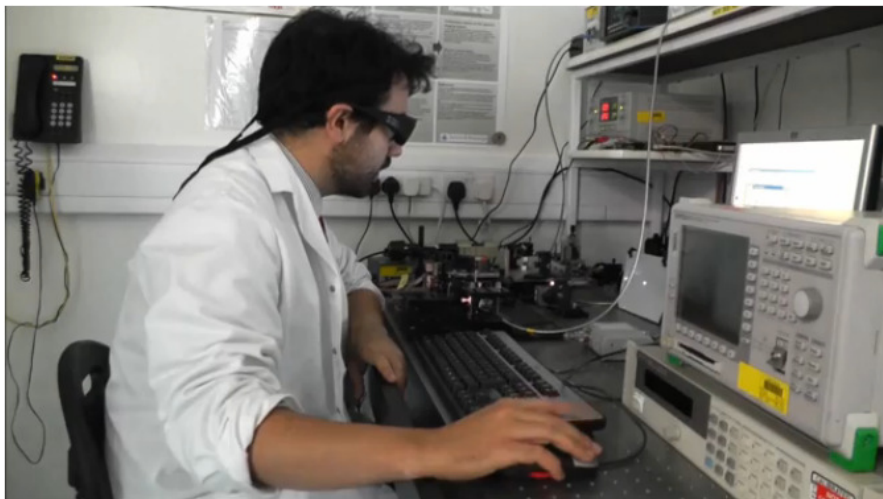
### ***Script for Section 5: The Consortium and Funding Mechanism***

"The development of each of these components requires a specialist skill set."

"MINERVA's success as a project will be achieved by drawing together a consortium of leading-edge European research, development and production establishments."

"The European Commission is supporting this project financially through the Framework 7 funding mechanism."

*"Framework 7 is a tightly-controlled approach to distributing EU-wide research funds to the best possible European projects, with a long term aim to ensure the continued competitiveness of European businesses."*



### ***Script for Section 6: Lead-Out and Direction to Web Sites***

"The MINERVA consortium has begun development of this cutting-edge technology, and will work closely together over a period of four years to ensure success."

"For more information on Framework 7 research funding or the MINERVA project, please take a look at these websites."