



# The ACGT Educational Video Report

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Authors: Organisation: Email Address:	Chris Andronis, Biovista candronis @biovista.com

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**ABSTRACT:** This document reports on the ACGT Video

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### List of Contributors

- Manolis Tsiknakis (FORTH)
- Stelios Sfakianakis (FORTH)
- Norbert Graf (USSAR)
- Christine Desmedt (IJB)
- Nikolaus Forgo (LUH)
- George Stamatakos (ICCS)
- Stefan Rueping (FgH)

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## 1 Background

A major dissemination deliverable of ACGT is the ACGT Video. The aim of this video is to provide a 'popular science' level presentation of the ACGT project as a whole raising awareness of the challenges addressed, current solutions and future work that is still needed.

This deliverable provides a summary of the work done and accompanies the video itself.

## 2 Summary of Work Done

The ACGT Video has been in the planning phase since November 2009 when initial design specifications were considered. Technical Report ACGT-TR-15.2-1-BVA-v1 presented the structure and design principles as well as the initial narrative options for the video. Briefly the principles for the video were the following:

- Target Group: the general public
- Aim: to provide a 'popular science' level video that would introduce the problem area of ACGT, discuss challenges, present the work of the consortium and results obtained and finally point to the future by mentioning open questions and challenges that remain to be addressed. Create excitement and support for ACGT-type work and future such.
- Duration: 30 minutes
- Context of presentation: Present the IT solutions developed in the context of specific medical and biological research environments that a non-specialist audience could relate to.

With the above specifications in hand the consortium searched for potential specialist subcontractors who could undertake the entire video production task. CAID (based in Athens) was initially selected. CAID attended a number of ACGT meetings and recorded on site Professor Adrian Harris of Oxford University.

Early in 2010, the PMB decided for administrative reasons to transfer the production of the Video to FORTH. FORTH being a public institution had to solicit offers from the open market. This was done in Q1 2010 with an official Request for Tenders (see Appendix A) and the contract was finally awarded to HoneyBee, an audiovisual communications company based in Greece.

HoneyBee in collaboration with Biovista refined the initial narrative developed in ACGT-TR-15.2-1-BVA-v1 (see Appendix B) and carried out the appropriate video recordings in May and June 2010. Initial versions of the video were circulated for amongst PMB members for

comments in July 2010, with the final version being delivered at the end of July in 500 DVD copies as per the relevant sub-contract.

### **3 Outcome**

The multimedia assets produced in this work activity include:

- one master copy of a popular science video for both internet and professional use (appr. 30 minutes duration).
- 500 copies of the Video in DVD format.
- 700 high-resolution photographs generated during the production period.
- an abbreviated version of the video for both internet and professional use (appr 8,5 minutes)
- an internet version of the abbreviated video and
- a 20 seconds television spot.

The ACGT video is a 30 minute, high definition, popular science production presenting the challenges of clinical trials and in particular those relating to integrating multi-centric, multi-format data and related services in an easy to use manner for end users such as clinical doctors and bio-researchers.

The video begins with an emphasis on end users (such as Prof.s Adrian Harris and Norbert Graf) who set the context for the IT solutions and approach adopted by ACGT. Various ACGT technologies are then presented in a sequential fashion, discussing the technological challenges that need to be addressed in order to support the needs of the end users. The video also touches upon the legal and ethical dimensions of the problem highlighting some of the important difficulties that exist at the European level.

In the closing parts, the video presents exploitable and exploited results of the projects as well as remaining challenges that need to be addressed in the future.

The ACGT video has been produced in 500 DVD copies and is also available in electronic format.

### **4 Video Dissemination and Usage Plan**

The video will be distributed to all consortium members and a number of copies will also be provided to the European Commission for its own dissemination purposes.

Partners will be free to use it for their own promotional purposes, including making it available in its entirety through their individual web sites.

The consortium is also considering diffusing the video via national TV and in the case of

Greek TV Honeybee is available to help.

## Appendix A: The ACGT Video Narrative

### Post-genomic Research on Cancer, individualised medicine and new technologies

#### ACGT VIDEO NARRATIVE

[NARRATOR]

{voice over pictures from a hospital ward or lab}

Medicines are wonderful things!

Just THINK about it...

You get sick...

You go to your doctor...

He examines you and prescribes a drug.

You take the medicine and in a few days you're fine again...

... At least most of the times...

... Because there ARE times when drugs don't work, OR, even if they DO work, they come with unwanted side effects...

But HOW do we get drugs to work as we want them to, in the first place?

Drug design and development is a very complex, lengthy and expensive affair. At the end of this process we get the drugs that you and I are given when sick. Drug development can take more than 10 years and cost MORE THAN 1 BILLION €...

Small wonder then, that the scientific, medical and pharmaceuticals communities are trying hard to make the whole process more efficient and safe for everyone involved!

Within the drug development process, Clinical Trials are one of the most important steps. They are the part where a new drug is tested in selected groups of patients in order to make sure that it will be safe for people to take and that it will do its job, as intended.

Clinical Trials are also instrumental in helping us understand how a disease works and what bodily signs to look for, in order to understand if a particular drug will eventually work or not.



Professor Norbert Graf of the University Clinic in Homburg, Germany, is at the forefront of such efforts. He is the Director of the Clinic for Pediatric Oncology and Hematology and leads the fight against a very nasty disease, called Child Nephroblastoma.

[\[N.GRAF gives a very brief intro on the work at the clinic\]](#)

[NARRATOR]

Professor Graf is not alone in his fight against disease. Professor Adrian Harris of Oxford University is another scientist who is leading the fight against cancer...

[\[A.HARRIS video\]](#)

Dr. Christine Desmedt from the Jules Bordet Institute in Brussels, an autonomous center devoted entirely to the fight against cancer, focuses on the identification and validation of prognostic and predictive markers in breast cancer, as well as in better characterization of breast cancer development and metastasis.

[\[C.DESMEDT video – brief intro to her work\]](#)

[NARRATOR]

Professors Graf and Harris and Dr. Desmedt, along with many other researchers, depend for their work on accessing and analyzing prodigious amounts of data.

Data such as patient records and clinical trials records that correlate vital bodily statistics of patients with their disease and how this is affected, when they are given one drug or another.

But, despite the importance of this data and the advances of Information Technology, it is still not possible today to offer professors Graf, Harris and their many colleagues easy access to it.

Nor is it easy for them to exchange data and so collaborate with each other more effectively on difficult cases.

Enter ACGT!

A 4-year project co-sponsored by the European Commission and 24 partners, academic and commercial, of the consortium, from 7 European countries and Japan.

[\[M. TSIKNAKIS video: brief intro to ACGT\]](#)

[NARRATOR]

[\(voice-over on pictures from a big data center\)](#)

There is no doubt that ACGT is an ambitious project. And like all ambitious undertakings, it requires a backbone that can take the load and fully support it. In the case of ACGT that backbone is called “Grid Computing”.

Grid computing is a high-performance computing environment which includes all the necessary infrastructure and special software that makes it possible to cope with the huge amounts of both clinical and genomic data, meet the computationally costly data processing needs and easily distribute the extracted knowledge among researchers and clinicians.

Yet, a bio-medical computing grid on its own doesn't offer much help. We need to add services and other resources that make good use of this prodigious and distributed computing power, ultimately serving researchers and clinicians in their daily tasks.

And this is precisely another goal that ACGT has set to achieve.

But there is a twist.

And the twist in the case of ACGT is called 'semantic integration'.

You see, it is relatively easy to create software tools that perform certain specific tasks quite well. But, in order to solve complex problems like drug development, efficient management of clinical trials and knowledge discovery, we need more...

We need system components that can be easily and transparently integrated. Systems that pass data between themselves, without the clinicians and bio-researchers having to grapple with details and software technicalities, they are not familiar or comfortable with. That means systems and services that enable integrated access to heterogeneous, multi-level data (from the level of genes, proteins and organs to the individual and the whole population), taking into account standard clinical and genomic ontologies

[voice-over on pictures from a big data center II]

[NARRATOR]

So, we now have semantic integration and it is easier to work with the multitude of tools that we need in order to address the complex problems of medical research and clinical trials.

But what are these tools?

Well [pause] the simple answer is that "they are many and quite varied"

... It just depends on the kinds of specific tasks you wish to tackle...

ACGT is heavily focused on supporting basic research and the management of clinical trials. So, it was necessary for the consortium to develop tools that meet these goals.

One such tool is called the Oncosimulator. It has been developed by Dr. George Stamatakos of the National Technical University of Athens

[GEORGE STAMATAKOS video: brief intro to Oncosimulator]

[NARRATOR]

The Oncosimulator is an advanced research tool that is highly tuned to a specific task. Yet, studying the growth of tumors with this method would be immensely more difficult **without** the helping hand of visualization scientists....

[\[R. BELLEMAN video: quick intro to visualization techniques\]](#)

ACGT has been developing other tools as well. Tools that are more open-ended and give the end user more freedom to explore things. Like, for example the literature-based discovery platform created by one of the commercial partners of ACGT, Biovista Inc.

[\[A PERSIDIS video: brief intro to BEA\]](#)

[NARRATOR]

Oncosimulator, R suite and literature mining are all quite impressive tasks. But these are just the building blocks. Clinical trials, the understanding of disease mechanisms and the development of effective medicines are all very complex tasks and more often than not clinicians and bio-researchers will need to combine these tools in order to address them.

At this point, the ACGT Workflow Editor takes over; a tool that, in the right hands, can take simple or complex building blocks like the Oncosimulator and combine them into a complete system that supports larger scale tasks within hospitals and medical research labs.

[\[S. SFAKIANAKIS video: brief intro to Workflow Editor\]](#)

[NARRATOR]

Well, here we are... Powerful tools, made more flexible via 'semantic integration' and hopefully better able to support doctors and researchers in their search for more effective, personalized health care.

Is that all? Well, [**pause**] not quite!

You see, on top of the technical issues being tackled, ACGT must also contend with the ethical and legal implications of their use.

Professor Nikolaus Forgó from the University of Hannover explains why...

[\[N. FORGO video: quick intro to ethical/legal issue\]](#)

[NARRATOR]

So, now we've come full circle. ...

Well, is all this working?

It is still early days, but some ACGT members are already reporting significant results...

[\[A PERSIDIS video II: brief mention of the way the system works\]](#)

[NARRATOR]

And... what about medical doctors and their work on clinical trials?

[N. GRAF video II: mentions some successes they have at the clinic, either in terms of statistics or in terms of collaboration]

[NARRATOR]

As for the future? Dr. Tsiknakis, the scientific manager of the ACGT has a very clear (and positive) idea of what is to follow...

[M TSIKNAKIS video II: closing remarks on the next steps and where ACGT may lead]

**THE END**