It is a lazy Sunday afternoon after a long Saturday night… and here I am, sitting on a bench in Hyde Park. '…a quite evening… after a crazy party night is well deserved…' were my thoughts whilst looking at the people rollerblading around the lake. Suddenly I hear my mobile's ringing; it is Dennis, my friend from the University. I was wondering how he was doing – a little hungover maybe?
-Hey mate, how are you? Are you all right?
-Yeah man, I'm fine, I was just checking out our new assignment *`Parallel Environments within Divine and Agnostic Algorithms of Creation.…`* I thought I should call you 'cause … man- it really doesn't make any sense…
-Hmm…well, emm…maybe not now…I'm about to lay flat on the grass in Hyde Park, enjoying the sunshine…
-Hey, don't feel pressured – but we have to do it by the end of next week – so you might want to have a look at this and then talk about it. C'mon, you don't have to leave the park – you know that…
-Alright – just a moment…

I plugged into my mobile the new pair of sunglasses I bought the summer I was in Greece. No fancy stuff – just a nice pair, good enough for the morning after party – not to mention you don't look stupid when you're 'out there' – in your mobile's cyberspace.
The afternoon sunshine got a bit blurred and darkened, and then gave its place to a rapidly progressive appearance of a 3D environment. The sound of the people around me got mixed with some electronic interference from the small headphones embedded in my sunglasses. The lenses from outside were looking like normal lenses – sub-mirroring the environment- but there was always an option to project a message like *'don't bother me please'* or *'I 'm not here but I still can see you'*. Not my liking though – especially when cyber-communicating in a public place. Too much information – don't want to.
But the best thing about these sunglasses is that you don't have to worry about energy – no batteries needed – but that's because they are sunglasses, if you know what I mean!

Dennis was sitting in his armchair in front of the computer, as I was appearing in his cyber-room – an identical representation of his actual room, in Muswell Hill.
The environment resolution was absolutely faultless – no flickering or distorted angles. Mobile graphic cards have been evolved since I got my first mobile with a coloured screen– almost 10 years ago. He was looking like he'd just woken up – which he had. I was looking exactly like how I left from home this morning – last time I looked at myself in the mirror just before I went out of house.
The mirror in my house is one of the latest models. Too many settings – although it can do lots of things – if you want or need them of course. Every time you look at yourself in this mirror the databank in the central house computer is updated with the current image of yours – describing how you look and what you wore – and not only that: Through the

mirror you can see past states of yours, i.e. how you were looking yesterday or last week, or even fiction ones, i.e. with this or that kind of t-shirt, jacket.
Our university project is the replication of our everyday life, created and modelled in a computer system in the form of a video game– the aim is to explore variations of *'decisions that have been already taken and actions that have already been done'* – that means that my everyday mirror image is well being used. Of course in the cyber mobile space you could appear as you like – but people tend to use this option only when they are participating in cyber communities. In normal everyday life, when there is a need for mobile 3D contact – from people who are using the technology for working, or studying, or meeting up with someone who is far away – they prefer to act like themselves. In police stations and the cyber-courtroom for instance, this is required by law; you can't enter the virtual room if you're not who you're supposed to be.

By the time I appeared to Dennis's room, he was typing something on the computer. He was actually doing this on real time in his place – what I was seeing was the result of his key-tapping actions as they were captured by his keyboard – and then processed in a way to reproduce the actual move of his hands on the keypad. The combination of the data that his computer was receiving from the Internet plus the on-time calculation of the moving 3D model of himself plus the representation of his room on the house central database, all these were being transmitted through his mobile, routed through one of the many wireless broadband network nodes around the city, and finally finding their way up to my mobile handset. In the same time, my holographic –recently updated by mirror- picture of me was sent back to Dennis's virtual mobile reality -equipped with the latest human-body modelling movement application- which was enhanced for both me and Dennis with the data that our clothes were producing in real-time according to our movements. The speech, image and body movement synchronisation is amazing – due to the high-detailed and powerful multi-dimensional graphics libraries that are available nowadays for free – so every virtual mobile can download and use.

All this were able to be realised by a combination of *Embedded WiSeNts*, a widespread mini-electronic computer technology that enables 'Cooperating Embedded Systems for Exploration and Control featuring Wireless Sensor Networks'.
These super-nano microchips are almost everywhere, in every kind of hi-tech or house equipment, in every pack of consumable product, in every clothing brand, even in things like the litter tray of a cat or the rubbish bin. They have changed drastically all aspects of life – even when machines are not involved, like relationships and beliefs.

First it was simple things like automated switch-controllers or small product-information data containers - they could be read with appropriate equipment but rapidly they evolved and acted wirelessly, transmitting data of the state of the object, most of the times using power sources such as heat or movement. Functions and information of things like the house-hold equipment, alarms, hi-fi, lights and heating are already easily accessible wireless from your mobile where ever you are – when ever you want. It's been quite a long time since you worried about leaving the light on, or the tap is leaking and you're on the beach in the Seychelles. Every new house is required to have a central network infrastructure which can be controlled externally by your computer and your mobile if you like – and these little things can interconnect with it. You can't get a building license otherwise. New ethical and operational issues rose by this – who has the

password, who is the admin of the house, (me or my girlfriend?), and what if more than one person has main access to control things from far? And what about if my mobile is stolen? Does this mean that a complete stranger can have fun by changing the TV channels whilst I'm watching my favorite show?

No worry, that is history now – reliable mobile phone speech recognition and other biometric safety measures are too much of a hassle to try to bypass – there are always loop-holes and back-doors but they are mostly virtual and anyway, most of the people have their iconic electronic world tailored as they wish – not as it is in reality. The same amount of difficulty applies for people to break through your temporary virtual world as if they wanted to make phone calls using your number without having your sim card.

But in the case of Dennis and me and our project, we wanted a model of our lives as real as possible, so that we'll be able to feed it with slightly modified actual data of our everyday life – just to study and research how the personal decision factor relates with a pseudo-random model of chance and choices when applied in the deterministic universe of our computers. That way we thought that we would explore the possibilities of interference among two distinct but almost identical dimensions by letting things that happening in the virtual world to reflect themselves in reality. In other words, we were dealing with the simple fact that we will never be sure for the state of specific material things that their exact representation existed also in our virtual world and vice-versa – unless we develop a way of maintaining our parallel but overlapping lives in some kind of order, something which is rather unlikely to happen!

To achieve this, we used transmissions of these *Embedded WiSeNts* that exist in our everyday life objects, to create a replica of our personal spaces. By calculating angles and distances of their position – plus the information provided by the industry design specifications - like the kind of object and its purpose & functionality- we ended up with a practically identical virtual interface that simulates our actual environment in bits and bytes. Our aim is to study the possibility to create the first virtual work environment, a work model that will be adopted by the most advanced and innovative hi-tech industries and not only. Our vision included small internet enterprises selling goods or services to update their web sites by introducing links to virtual halls, where their products will be demonstrated by several plugged-in employers or in many cases by just fictional avatars. No need any more for special designed 3D object libraries – since the *Embedded WiSeNts* chips allow every existing object to have its holographic representation already encoded and ready to be extracted and used any time.

It is as simple as this: You just need a database with your products – and your small virtual expo can be set up in minutes. Every change in your stock can be reflected immediately, and if you have a real hall that goods are demonstrated in shelves, the actual hall itself can be reproduced and be displayed and updated on request.

Anyone knows that a day in the office today is not as it was in the past...Working from home or from afar has been a reality for many years now, but in our model, you don't have to go to the office and you don't have to log in and use the server if you are urgently needed– you just have to plug your self in the office. There are of course rules that have to be followed: Every employer has to visit the same virtual office. Only small changes to your personal work space are allowed – just like in real life. The reason for this is that people's avatars are interacting in a virtual space that is created by data continuously transmitted by the *Embedded WiSeNts* existing in the actual environment.

That means that the report you just printed on your virtual cyber office in this new laser jet, it will be printed in exactly the same laser jet in the real office (if it exists such a thing like a real office) – and if there were a paper jam, you would be able to see it– and in more advanced versions to fix it - only of course if you're wearing clothes (or something similar) and you're not laying naked on the bed or elsewhere...

Because clothing is a very important aspect of life, and *Embedded WiSeNts* have changed the way we are considering them. If someone were watching me now – as I am sitting on this bench in Hyde Park – he could see a guy making funny gestures with his hand – this is because I am checking out some CDs Dennis has on his shelves. As my hands are moving, my jacket detects the movement of my arms and wrists, communicates them to my mobile, which is responsible to generate their representation. This happens with my trousers and my shoes of course – I only need to enable one option.

From day one they became widely accepted and used, these *Embedded WiSeNts* have added unlimited new possibilities in everyday life, and not only in the virtual world. Everything is interconnected and can be controlled from a distance with your mobile. You can lock or unlock your chest of drawers if you want whilst you're on the bus – it all depends if you want your girlfriend to find your diary or your hidden telephone agenda...

There are so many different ways that these widgets are being used, that it is impossible to count them all...For example, have you ever seen these days a queue at the supermarket till? No, of course not – people that go to super markets don't have to search for goods in the shelves – they just let themselves be guided by these fancy new trolleys embedded with *WiSeNTs* to find the shelf they want – and then, all they have to do then is to fill the trolley up with the goods and then head for the exit – as every product package contains microchips that communicate with the exits' sensors, charging your card with the appropriate amount of money. No place for queues here in our hectic city life - no way also to bypass the supermarket entrance or exit if you don't have the right wise card...And the best thing of all is that the trolley comes back to the super market alone!

Other uses: Bins that are full informing bin men to pick them up, maps providing updated information for countries you select by just touching them, keys that can be reprogrammed to fit another lock, drink bottles and medicine or food packages informing you about the expire day or improper storing conditions etc. Want to have some fun? You can be a master in role playing, adventures or strategy games, but playing a game with your environment as a game level – this is something different… Imagine: Play well, play smart, gain lots of points or do the hack, and a new mission will appear on your screen – a secret level - a hidden easter egg – sent it to your friends to see if they dare to challenge you in your place! Everything interacts within and with 'out there'. From the simplest operation to the extreme one – everything can interfere with everything – as long there is some *Embedded WiSeNts* hidden somewhere.

And you don't need to be a computer geek to handle all that...Household & hi-fi equipment with *Embedded WiSeNts* are designed to wirelessly cooperate and communicate with no-need of a central computer –although if there is one, one can set up things like the parallel interactive virtual environment as we've done. If you don't need one – or you don't have time, don't worry. Every refrigerator or every microwave that respects itself have the ability to change a TV channel, open the door, pump up the volume or change radio stations at any time. Accordingly, you can observe the progress of your nice dinner burning in the oven– chicken with roast potatoes that you are

preparing to impress her- whilst watching your favorite football match drinking beer on the sofa in the lounge. Just choose the right channel or press the right buttons or give the right order, and a yummy (at least most of the time) picture (plus information about the state of the cooking), will appear in your plasma screen, in your mobile TFT, or even in these new sunglasses from this tourist trap in the Greek islands.

As for the geeks like me and my friend Dennis, most discussed 3D-WebCam technologies have found a way through our personal space with the real excuse to model our life through a matrix of ultimately perplexed trigonometric equations and game design technology. Patch it up with a broad-band connection and your mobile cyber-space is more than a reality...It's really in our hands to decide to live in one or two or more identical or alternate realities.

…And the difference between virtual and real world? Well, it can be as big as living a secret life inside the real and a real life inside the virtual – or the opposite perhaps - and as small as the difference between the open window in our cyber-room - but with the same one being closed in reality.

-Are you finished with the CDs?

Dennis's voice produced colored sound waveforms in the CD's surface I was looking at – and his words started trailing in the CD label: 'C'mon let's check this thing...It seems quite interesting...'

I floated near the arm chair and had a look on his screen.

The assignment description was wide open in a new window so we started reading.

<< -- ***Parallel Environments within Divine and Agnostic Algorithms of Creation*** --

Model and create a new environment using the Earth libraries we provide - minus the historical and contemporary ethical and philosophical classes.

With the use of evolution algorithms, and by fast forwarding them for time and space complexity aspects, simulate genetical transformations, aiming the creation of intelligence within the system. You are expected to experiment with the parameters until the creation of viable and self contained entities (who will have the power to interact intellectually between themselves and their environment) are created. From the moment of creation and afterwards you should observe the behaviour of those entities but you are not allowed to interfere.

Your objective is to be God, and you'll achieve this if the entities created develop analytical and philosophical qualities in the amount that they will start wondering from where and for what they' re created for. Full marks will be granted if a form of technological advance is achieved by the entities. If this happens, as a bonus you are allowed to include in your project the full version of ***Embedded WiSeNts*** *libraries – such this will ease the way of your entities to upgrade themselves the best way is possible in their future...>>*

Panagiotis Bairaktaris
Date:
22-11-2005