

ANTON P. ŽELEZNIKAR, PhD
Volaričeva ul. 8
SI 1111 Ljubljana
Slovenia, EU
anton.p.zeleznikar@siol.net

First draft: November 29, 2006

Revised: July 17, 2007

© Anton P. Železnikar

World Project for Implementation of Informational Consciousness System (ICS)

An open initiative for study and implementation of Informational Consciousness, with European, American, Asian, Oceanic, and African Participation

Financial and manpower participation of

EUROPEAN UNION and
Austria, Belgium, Croatia, Czech Republic, France, Great Britain, Greece, Italy, Netherlands, Norway, Portugal, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland.

AMERICAN SUBCONTINENTS:
United States, Canada, Argentina, Brazil, Mexico.

ASIA:
China, India, Japan, Singapore, South Korea, Taiwan.

OCEANIA: *Australia, New Zealand*

Research areas

INFORMATIONAL PHILOSOPHY and theory as fundamental field of development and implementation of informational consciousness;
brain sciences, cognitive sciences, computer sciences, consciousness studies, mathematics, neural sciences, psychological sciences, system sciences.

Organizational form

CONSORTIUM OF STATE AND INDUSTRY SUBJECTS, *universities, research and technological institutes, research associations, international corporations, individual entrepreneurs.*

Goals

METHODOLOGY AND IMPLEMENTATION *of informational consciousness system (in short, ICS) by computer machinery nets, programming tools, and resulting program*

This draft is a subject of change — July 17, 2007: 1:04pm, in EU

packages, called INFORMATIONAL MACHINES, for different purposes of ICS application in local and global environment (WWW, Internet), as individual spiritual machines, sociable and working robots.

Project duration

A TEN-YEAR PERIOD or like that from the point of project organizational constitution. In meantime, it is presumed, information technology and information communication will advance to the point assuring the necessary complexity and functionality of the so-called informational machines as underlying structure and organization for informational consciousness.

Project coordination

A CENTRALIZED MANAGEMENT with disciplinary, country, corporative, consortium and like that submanagement.

Internet Journal for Informational Consciousness

On the highest professional level for publishing research, methodology, and implementation results of the project.

Financial means

According to participation of project partners, not exceeding 500 millions Euro, in ten-year period.

*Quite another perspective could be a charge-free participation in the project implementation. Such an approach of ICS development would be similar to the shareware projects known as *TEX*, Linux, and the like. This sort of organization would allow the participation of universities, students, and individuals all over the world.*

Structure of working groups

Research, methodology, and implementation teams

Project's content determination

Project implementation according to the central idea of ICS, as currently presented by documents on <http://www.artifco.org>, using existing and during the project developed methodological means in the process of ICS hardware and software implementation and experiment, in local and global environment.

Final results of the project

INFORMATIONAL MACHINES provided with ICS, being ready for use as spiritual machines and conscious components of robots.

Project foundation on the global level

ICS BECOMES A TECHNOLOGICALLY ACTUAL OBJECT concerning the benefit and welfare of the world population, in the sense of survival, and in the sense of individual human mind development by the use of ICS. There is nothing like that as informational

means for consciousness constitution in the live and artificial. Such a project is beneficial and useful in human intellectual work and the use of robots in all imaginable ways of production, home, and profession. It is like a second and parallel organized, individualized intimate soul and, simultaneously, spirit of human, connected via high-speed technology to information sources in world-wide web. It is an ideal mediator, advisor, and robot in live human environment, consciously adapted, configurable and fitted. This sort of technological and applicative complexity, connectivity and technological performance guaranties the behavior of ICS, to operate on its own conscious and self-conscious informational level.

General world-wide context

INFORMATION SOCIETY, information era, information mind, and other kinds of synonyms are in general use today, in the context of globalization. To all this terms, informational consciousness represents concepts bound on specific philosophy, theory, and methodology of the informational. The informational is the being, phenomenalizing informationally, being given and taken as information, and emerging as possible information. Being is just a kind of informing.

Project implementation

TOP-DOWN AND BOTTOM-UP APPROACH will take place depending on group and individual initiative of participants. The so-called hard and soft implementation problems¹ will be distinguished, listed, and systemized. Problems will be presented and discussed within a closed project discussion Forum. The final product is informational machine, realized by ICS hardware architecture and ICS operating system in local and global communication environment, as that kind of fundament of basic and complex properties, which will guaranty to establish an individual ICS by specific needs and intentions of each individual user².

European Research and Implementation Initiative

Within the Framework Programme 7 (FP7) the so-called Ideas as a frontier research and future technological implementation will be financially supported by **EUR 7 510 million** in the 2007–2013 period. The goal and aim basis is as follows.

What's the benefit for citizens: Countries with leading-edge research are best positioned to deliver a better quality of life to their citizens, while maintaining their economic position and advancing their global competitiveness. During FP7 the Ideas programme will fund EU frontier research. The concept behind Ideas is that first-rate researchers

¹For instance, to the hard implementation problems belong conceptual and programming implementation concerning the emerging of meaning by the use of iterative informational circledness, where meaning is generated for named entites, in a language-, visual- and audio-like environment.

²To configure one's own individually conceptualized spiritual machine, professionally fitted intellectual accelerator, professional advisor, professional educator, cognitive and emotional partner, and the like, will become commonplace. For this purpose, build-in and globally available user friendly tools will be on disposal. However, solely individual user imagination will rise the product to the highly specific performance and informational taste of the us.

are best placed to identify new opportunities and directions at the frontiers of knowledge. These in turn will feed back into society and find their way to the industries and markets, and translate into the broader social innovations of the future.

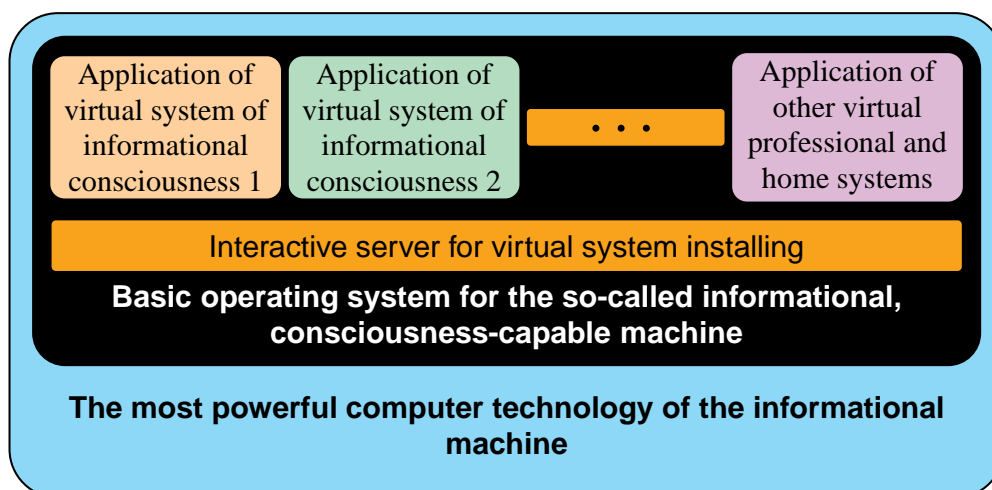
What's the benefit for researchers: The ERC (European Research Council) will have a unique position as a pan-European funding organisation designed to support the best science and scholarship across all fields of research through open and direct competition. It is expected to reinforce Europe's dynamic character, making it more attractive to leading scientists from both Europe and third countries, as well as for industrial investment. Two types of the ERC grant will be available, both operating on a "bottom-up" basis without predetermined priorities, across all fields of research:

- The ERC Starting Independent Researcher Grants (ERC Starting Grants). The objective is to provide support to the independent careers of outstanding researchers. They are either located in or moving to the EU and associated countries, and are at the stage of establishing their first research team or programme, whatever their nationality.
- The ERC Advanced Investigator Grants (ERC Advanced Grants). The objective is to support excellent frontier research projects by leading established researchers across the EU member states and associated countries, whatever their nationality. future.

What's the benefit for industry and SMEs: Projects will be funded on the basis of proposals presented by researchers both from the private and public sectors on subjects of their choice and evaluated on the sole criterion of excellence as judged by peer review. Frontier research is a key driver of wealth and social progress because it offers new opportunities for scientific and technological advancement, and is instrumental in producing new knowledge leading to future applications and markets.

The Project of Informational Consciousness fits these requirements in the respect of the benefit for citizens, independent research grants, benefit for industry and SMEs (Small and Medium Enterprises). The outcome of this project will be the so-called informational machine together with operating system and virtual system installer for developed consciousness system application. The framework architecture and basic organization of informational machine with consciousness capability is presented in Figure 1. This figure shows transparently how different applications can be virtualized on one single machine. Interactive server, as one of the substantial parts of the machine operating system, can install different systems with their own operating systems, serving as autonomous application systems upon the user choice. For instance, in an enterprise or a home, different consciousness system can be operated by different users on the same machine. Also, different other systems—the modern or archaic ones—can be installed on request. And, certainly, the most advanced technology for global and local communication is a must for the machine.

The underlying *properties of informational consciousness system* concern the spontaneous solving of informational circularity in ethnic language, video and audio environment, accumulating the complexity of spiritual, language, video, audio, and other

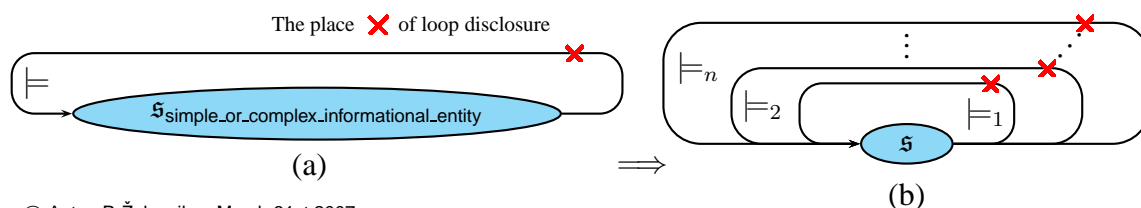


© Anton P. Železnikar, 31st March 2007

Figure 1: The architecture and organization of the future **informational machine** as a desktop, professional, robot, industrial computer or embedded equipment, respectively, possessing the property of individualized, user-fitted consciousness system.

phenomena, and constructing the most complex informational graph for conscious system application.

The solving of informational circularity roots in the disclosure of informational loops wherever in the informational graph, generating new formulas (sentences, visual and audio images) and, in this respect, expanding the domain of meaning belonging to a single or complex informational entity. This principle of disclosure can be graphically demonstrated as a basic structure of the form in Figure2. Symbols $\models, \models_1, \models_2, \dots, \models_n$



© Anton P. Železnikar, March 31st 2007

Figure 2: **Informational circularity** delivers the place of disclosure where new entities come into existence concerning the entity s . Each single form of circularity, denoted by the arc \models , in (a), implies a possible multiple of circularities through arcs denoted by $\models_1, \models_2, \dots, \models_n$, in (b).

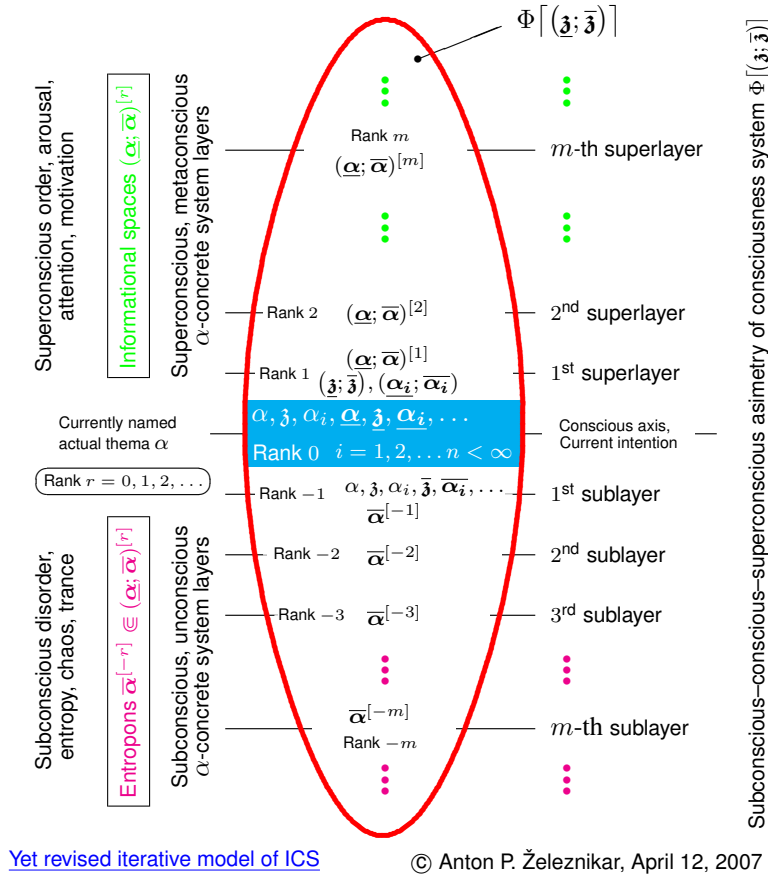
represent binary informational operators, functioning, for instance, as verb phrases in an ethnic language.

Stratification of the Informational Consciousness System. Within the concept of informational consciousness, the so-called stratification is the key, originating in the notion of informational space as a domain of conscious and subconscious meaning concerning a named operand (informational entity) α . Informational space unites the informon (conscious meaning) $\underline{\alpha}$ and entropion (subconscious meaning) $\bar{\alpha}$ in the form of a

system $(\underline{\alpha}; \overline{\alpha})$. Possessing the insight into the conscious as well the subconscious domain of meaning, informational space performs as a superconscious entity (operand). Through this concept of informational space, three layers of the system are introduced: the subconscious, conscious, and superconscious one.

However, informational space $(\underline{\alpha}; \overline{\alpha})$ of a named operand α can be comprehended as a recursive structure in the sense of what does it mean, allowing the logically derived

A presupposed hierarchy of multilayer, consciousness-meaningful, and informon-entron (informational space) structure and organization, concerning the informational consciousness system (ICS) $\Phi[(\underline{\mathfrak{z}}; \overline{\mathfrak{z}})]$



Yet revised iterative model of ICS

© Anton P. Železnikar, April 12, 2007

Figure 3: Iterative model of multilayer informational consciousness system (ICS), demonstrating a meaningful and sensible structure and organisation of conscious informing, extending from past (subconsciousness) across present (consciousness) to possible future (superconsciousness).

concept of *informational space concerning informational space*, that is, formally,

$$(\underline{\alpha}; \overline{\alpha})[(\underline{\alpha}; \overline{\alpha})] \Rightarrow \left((\underline{\alpha}; \overline{\alpha}); \overline{(\underline{\alpha}; \overline{\alpha})} \right)$$

The next step in this kind of recursion is, logically,

$$(\underline{\alpha}; \overline{\alpha}) \left[\left((\underline{\alpha}; \overline{\alpha}); \overline{(\underline{\alpha}; \overline{\alpha})} \right) \right] \Rightarrow \left(\left((\underline{\alpha}; \overline{\alpha}); \overline{(\underline{\alpha}; \overline{\alpha})} \right); \overline{\left((\underline{\alpha}; \overline{\alpha}); \overline{(\underline{\alpha}; \overline{\alpha})} \right)} \right)$$

and so on. The ranked sub- and superlayers in Fig. 3 can not be understood by means of Fig. 4, where the formalistically direct interpretation to the sub- and superlayer is presented. Operator \subset means that an informon is regularly a subsystem (subset) of

Multi-layer informational (meaningful) perplexedness model of ICS, showing the meaning of inclusion operators \subset and \circledast in relations $Entropon \subset Informational_space$ and $Informational_space \circledast Entropon$

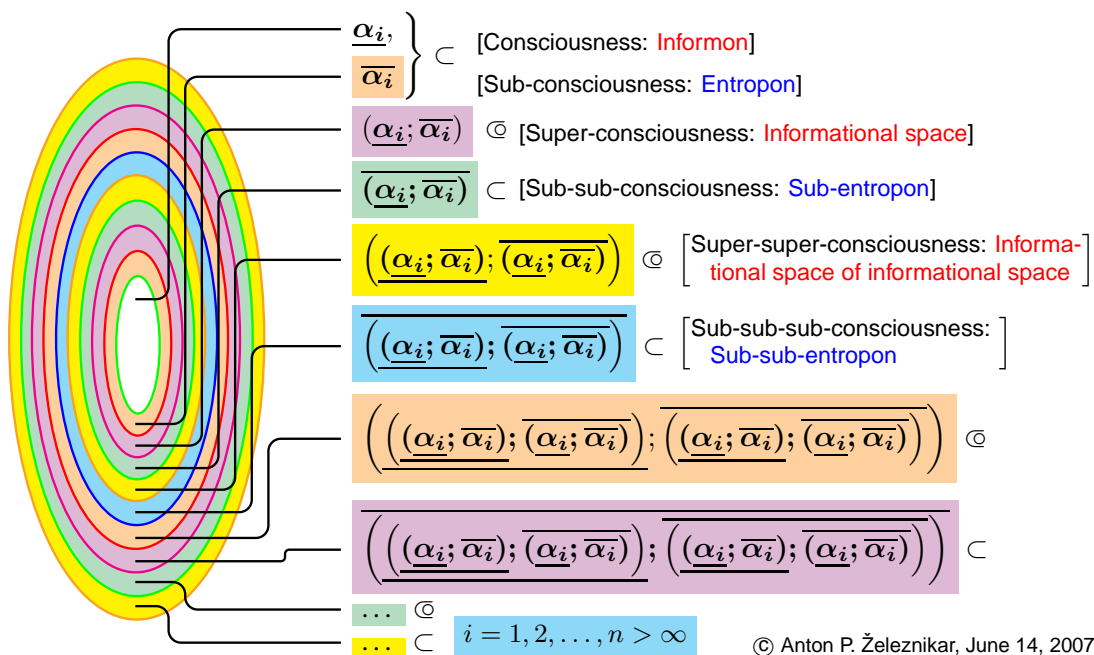


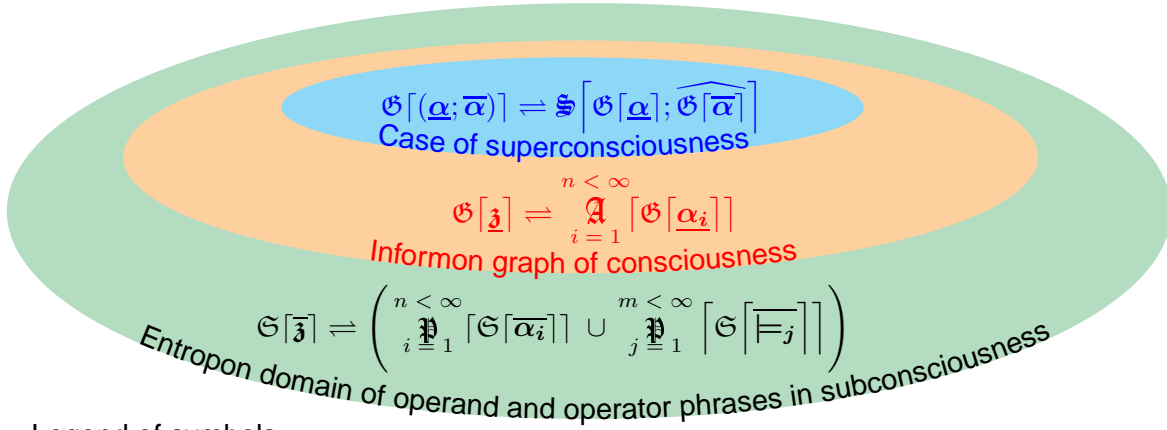
Figure 4: A mathematical model concerning the layerness of consciousness system, where the higher layers of the superconscious domain are sporadically altered by the deeper layers of subconscious domain and, in this sense, are actually mutually informationally (meaningfully) perplexed.

an informational space, that is $Entropon \subset Informational_space$, while operator \circledast means, specifically, $Informational_space \circledast Entropon$. These relations can be clearly distinguished for expressions in Fig. 4.

Graph structure of consciousness domain, set structure of subconsciousness domain, and graph-set structure of superconsciousness domain.

In implementing system of informational consciousness graph structures, set structures and graph-set structures play the role of sufficiently transparent concepts which can be easily realized in general and most specific situations. These structures perform like landscapes and data banks along which conscious entities emerge using operand and operator data acquired through conscious informing as experience, through learning from external data sources, and organizing data banks and graphs in an appropriate and effective formalistic form and meaningful expression. While the domain of consciousness is unique, the domain of subconsciousness and domain of superconsciousness are multi-layered in meaning, structure, and organisation. Fig. 5 shows the concept of

structures on the basic level of three layers — the subconscious, conscious, and superconscious one. Fig. 5 comes close to the state of the art where it can be recognized



Legend of symbols

α — named operand (in general),	$\widehat{\alpha}$ — entropon- α 's pseudograph,	$\mathfrak{P}_1^{n < \infty} [G[\alpha_i]]$ — all operand
$\underline{\alpha}$ — its informon (complex meaning of α),	\mathfrak{S} — system concerning graph and pseudograph,	phrases as entropons- α_i 's schemes,
$\overline{\alpha}$ — its entropon (operand and operator phrases in $\underline{\alpha}$),	$\mathfrak{G}[\mathfrak{z}]$ — the entire graph as an alloy of all graphs,	$\mathfrak{G}[\overline{=j}]$ — scheme of operator phrase
$(\underline{\alpha}; \overline{\alpha})$ — informational space named α ,	$\mathfrak{G}[\mathfrak{z}]$ — the entire scheme set of conscious entropon \mathfrak{z} ,	
$\mathfrak{G}[\underline{\alpha}]$ — informon- α 's graph,		

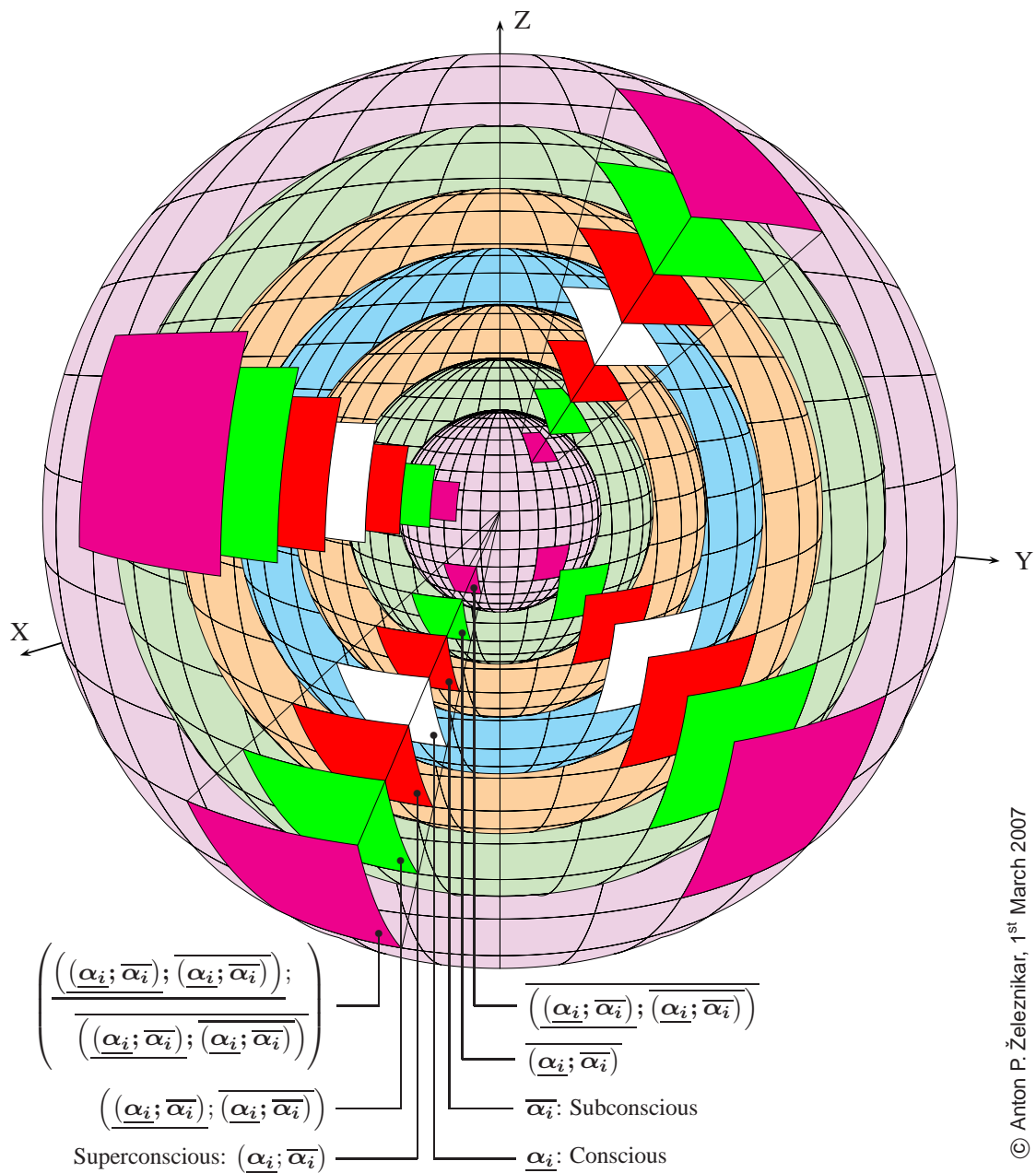
© Anton P. Železnikar, 2nd June, 2007

Figure 5: Subconscious, conscious and superconscious formalistic structure of consciousness system, proceeding out of the concepts of entropon, informon, and informational space.

that the main components and methodologies for informational consciousness system are conceptualized to an realistic level. In this situation, the project can start with fixed and objectively determined procedures concerning the structure and organisation of informational machine hardware, machine's specified computer architecture, and operating system particularities enabling the system to emerge from the state of initial *tabula rasa* to the state of user designed informational consciousness system for the very different and various applications system.

At the end of this preliminary and initial discourse let us present another geometrical and three-dimensional model based on the already presented informationally mathematised concepts in Fig. 3, Fig. 4 and also Fig. 5. The three-dimensional situation of this specimen is revealed as a case of another evidence in Fig. 6.

This geometrical illustration of informational consciousness system is just another trial of presentation concerning the stratification structure and organisation in an evident and picturesque outlook. Connections between layers, represented by coloured spheres, extend in depth (beneath) as well in height (above) regarding the conscious layer (lightcyanly coloured sphere). Each sphere is able to establish meridian, parallel-latitude and transversal operator connections. In this way, the sphere system together with the surface, in-depth and in-height connections demonstrates also a space graph of consciousness system. In superspheres there are superconscious informational spaces,



© Anton P. Železnikar, 1st March 2007

Figure 6: This is a virtual geometrical illustration of stratification concerning informational consciousness system. The white segments of the lightcyanly coloured conscious sphere represent the currently happened consciousness with its segments of the assymetrically positioned three subconscious and three superconscious spheres.

in subspheres subconscious entropions are located. Expressions below spheres denote cases of informational spaces and entropions for the named operand α_i . Visually emphasized white segments are the operand places of currently actual conscious happening in the conscious system.

Visual illustrations of abstract concepts can substantially contribute to concept understanding and interpretation, and in this way, to the strengthening of the acquired formal

knowledge. Such an understanding is essential for the implementation of informational consciousness system in the design stage concerning programming of machine operating system, being into informational environment embedded system. Virtual system illustration offers also a further interpretation and study of possibilities, coming up on philosophical and implementational level. In this manner, subconsciousness can proceed toward the sphere center and superconsciousness can extend outward to new spheres.

The role of informational decomposition concerning consciousness graph, denoted by $\mathfrak{G}[\mathfrak{J}]$, subconsciousness set of schematised operand and operator phrases, denoted by

$\mathfrak{P}_{i=1}^{n < \infty} [\mathfrak{G}[\overline{\alpha_i}]] \cup \mathfrak{P}_{j=1}^{m < \infty} [\mathfrak{G}[\overline{\mathfrak{F}_j}]]$, and an ethnic or other language thesaurus, denoted by $\mathfrak{T}[l_{\text{language}}]$.

Informational decomposition is an innerly supported subsystem for deriving formula- and scheme-structured operand and operator sequences as representatives of something's meaning. For instance, symbolism $\mathfrak{D}[\alpha]$ is used as an informational formula, denoted by $\varphi_{\triangleright}^{\nabla}[\alpha, \alpha_2, \dots, \alpha_{n_{\triangleright}^{\nabla}}]$, expressing the meaning of operand α , and $\mathfrak{G}[\mathfrak{D}[\alpha]]$ denotes the scheme of this meaning omitting the formula's parenthesis pairs, that is, $\mathfrak{G}[\varphi_{\triangleright}^{\nabla}[\alpha, \alpha_2, \dots, \alpha_{n_{\triangleright}^{\nabla}}]] \Leftrightarrow (\alpha \models \alpha_2 \models \dots \models \alpha_{n_{\triangleright}^{\nabla}})$. Two predefined forms of decomposition is general decomposition $\Delta_{\triangleright}^{\nabla}[\alpha]$ and metaphysicalistic decomposition $\mathfrak{M}_{\triangleright}^{\nabla}[\alpha]$, by which the most sophisticated and recursively perplexed structures of α 's meaning can be expressed.

The current proposal coordinator:

Anton P. Železnikar, anton.p.zeleznikar@siol.net, July 17, 2007: 1:04pm, in EU