" Vă bine gândesc"=
" My good thoughts are for you"

2010-2020

On 29th May 2010, Prof . M Drăgănescu, member of the *Romanian Academy* (the National Academy of Sciences of Romania), the man who led the design and creation of a national integrated I&C T sector, passed away.

This short presentation is a post mortem tribute to him with particular emphasis on his essential contribution to building a coherent and integrated, network-type I&C T sector in Romania.

Acad. Mihai Drăgănescu and The Birth of The Romanian I&CT Sector

Florin Gheorghe Filip

Agenda

- Biographical Data
- Forerunners of the domain I&CT
- Designing a coherent programme for creating an I&C T sector in Romania
- Coordinating the implementation of the programme; first results
- Other contributions to science and technology

Mihai Corneliu Drăgănescu (1929-2010)

A Romanian electronic engineer, philosopher, professor, and manager of science and technology in the *Information and communication* domain

Biographical Data

- Born on 06.10.1929 in Făget, Drajna, Prahova county, România; died on 29.05.2010;

- Professor at *TU "Politehnica"*, Bucharest (1951-1991);

- Director –general of the *National Research Institute for Informatics* –ICI Bucharest (www.ici.ro) (1974-1985);

- Member of the *Romanian Academy* (AR) (www.acad.ro) since 1964; president of AR (1990-1994), founder of *Information Science and Technology* section (1992)

- Honorary member of *Academy of Sciences of Moldova*; *IEEE life fellow*(1997); Corresponding member of *Academia Scienciorum et Artium Europeea.*

- Recipient of *Legion de honneur (1991)* and *Steaua Romaniei* national order*(2000).*

The Academy Headquarters

Information Science and Technology:
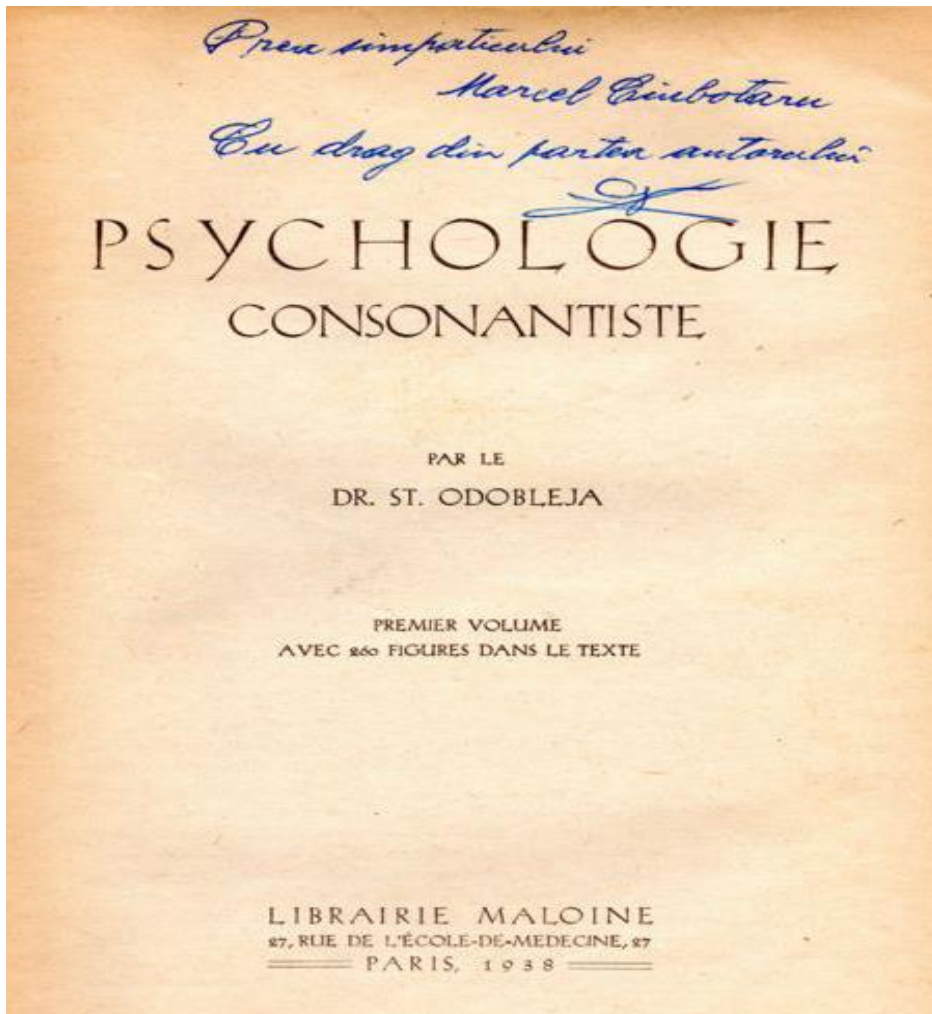# A Definition (M. Drăgănescu, 24.11.1998)

"The multidisciplinary field of science and technology that underpins the Information Society and includes

- the physical substrate of information,

- telecommunication,

- computers, software, information systems,

- theoretical informatics and theory of information,

- Internet, Web science,

- automation and systems theory, as well as

- specific applications in various domains such as: economics, sociology, the philosophy of information and so on."

A Partial List of Forerunning Moments (I)

- **1938**: "Psychologie consonantiste" (Editions Maloine, Paris) by Ştefan Odobleja, a foreruner of Generalized Cybernetics

- 1954: First course on "Algebraic Theory of Automatic Mechanisms"(published in 1959, in Romanian, by Editura Tehnică) by G. Moisil, an IEEE Computer Pioneer (1996).

- **1955-1957**: **CIFA1** computer designed by Dr.Victor Toma (1922**-2008**), followed by

  - 1961; **MECIPT** (Mașina Electronică de Calcul a Institutului Politehnic Timișoara), team led by Iosif Kaufmann și Wiliam Lőwenfeld ;

  - 1963: **DACICC-1** (Dispozitiv Automat de Calcul al Institutului de Calcul, Cluj 1963), Tiberiu Popoviciu, G. Farcas;

- **1957**: Romania joins **IFAC** (Intern. Fed. Autom. Control);

- **1959**:"**Computing Machines" section, Bucharest University**

- **1961**: Edmond Nicolau, Constantin Bălăceanu- Stolnici "Cibernetica", Editura Ştiinţifică, Bucureşti, 492 pag.

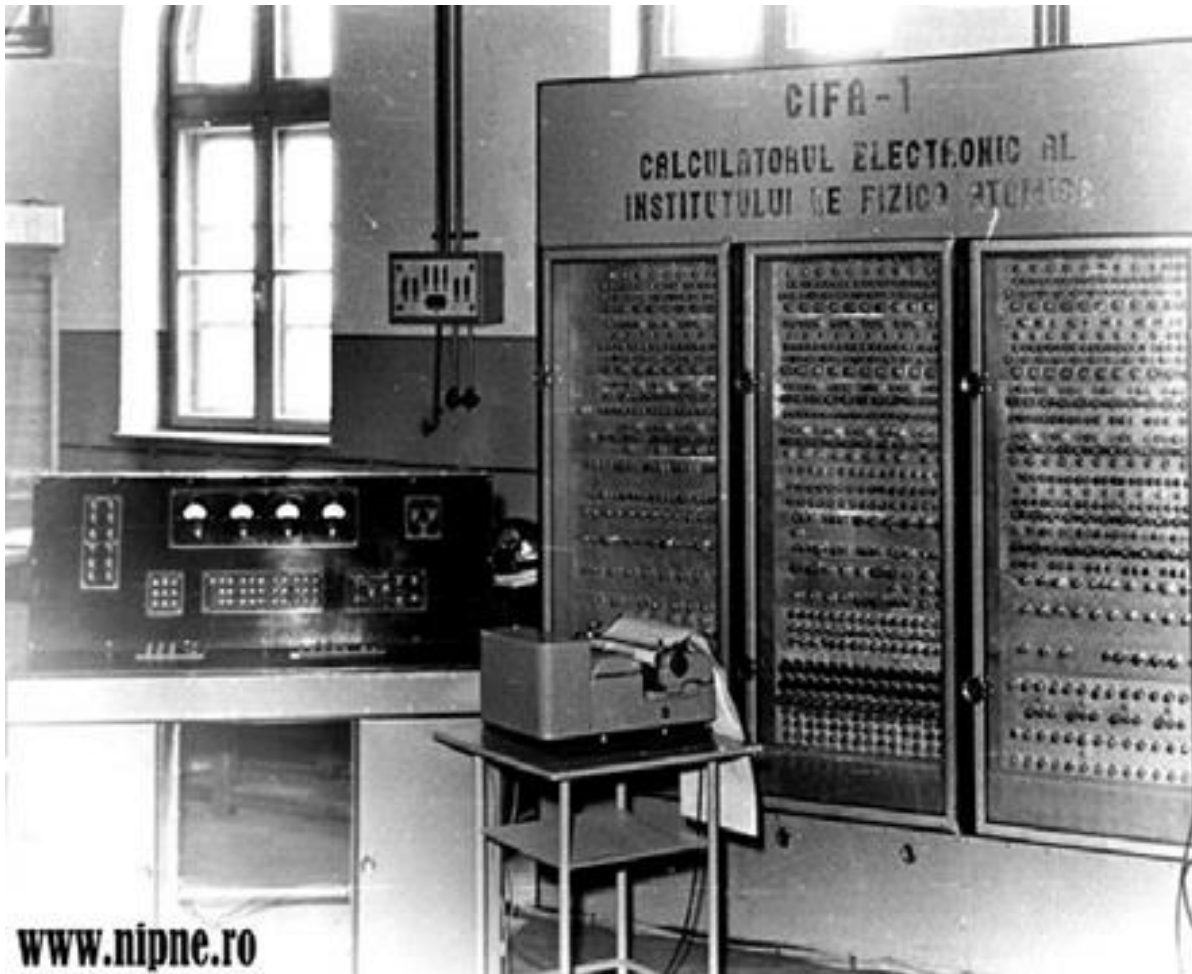# "Psychologie Consonantiste" by Odobleja

Computing Centre of Bucharest University and Acad. Moisil(1906-1973)

Credit: I. Vaduva (2014) "Centrul de calcul... "

CIFA 1 and Victor Toma

www.nipne.ro

Edmond Nicolau şi C. Bălăceanu Stolnici

Credit: Maria Cogălniceanu
"Corespondenţa intermitentă"

- **1960**: "Electronic Tubes, Transistors, and Devices", chair is set at TU Bucharest by T.Tănăsescu, M.Drăgănescu.

  - Tănăsescu T., *Manual de tuburi şi circuite electronice*, Editura Academiei, Bucureşti, 1955; *Circuite cu tranzistori,* Editura Tehnică, **1961;**

  - Drăgănescu M., *Procese electronice în dispozitive semiconductoare de circuit*, Editura Academiei, Bucureşti, **1962.**

- **1962**: **IPA** (Institute for Automation)

- **1962**: IPRS (Enterprise for Radio Parts & Semiconductors), Băneasa Factory for Integrated Bipolar Circuits & Devices.

- **1962**: *Automation* section is set in the T.U. Bucharest (becomes Dept. of "Automation & Computers" in 1967)

- **1962**: CCUB-Computer Centre of Bucharest University

- **1964**: Mecanization and Automating of Economic Calculus and Cybernetics, Section at ASE Bucharest

- **1966**: The first *Computer* chair (Inst. Politehnic Timișoara)

A Prospective Programme for the IT Sector in Romania

- "Programul de dotare a economiei naţionale cu echipamente moderne de calcul şi prelucrarea datelor " (21 iunie 1967)

- "The national programme of endowing the national economy with modern computing and data processing equipment" (June 21, 1967)

The draft program was debated in a working session organized by the National Council for Scientific Research with the participation of over 100 specialists, academia people, and decision-makers (May, 15-17, 1967)

An Integrated View.
Main Action Lines Addressed

1. Equipping the economy with computing facilities,

2. Building a research, production, and maintenance network in the country, and

3. Preparing the necessary staff for research, design, exploitation, and maintenance

Initial Condition

- In 1967: The Romanian economy had 1.6 computers per million inhabitants compared to
    - 22 in Italy,
    - 32 in France,
    - 46 in the Federal Republic of Germany,
    - 37 in Denmark,
    - 24 in Austria,
    - 32 in Belgium, and
    - 10 in Greece.

An Estimation of Necessary Staff

- "In 1970 it would be necessary to prepare at least:
  - l00 analysts,
  - 450 programmers with higher and intermediate education,
  - 100 electronics engineers for maintenance and construction,
  - 300 electronics technicians,
  - 400 operators for electronic computers peripheral equipments and computing machines with electronic devices."

Preparing the Staff (I)

"Preparing Romanian specialists within the program of cooperation with the [foreign] suppliers of equipment, by training them in the centers of these companies and by organizing courses at the beginning of these companies in our country;

Training top-level specialistsin foreign universities and computing centers;

Transformation of the current **University Computer Center** in Bucharest into a methodological center of the Ministry of Education; this center will be focused on staff training, but will also solve technical-scientific problems for different beneficiaries. At the methodological center, foreign specialists will be invited to hold conferences and courses"

Preparing the Staff (II)

- "The establishment of
  - a department of specialties in electronic computers in the academic year 1967-1968 at the **Polytechnic Institute in Bucharest**, and in
  - sections on the programming of electronic computers at the faculties of mathematics of the Universities of **Iasi, and Cluj,** .
  - a section at the **Institute of Economic Sciences**, on *economic cybernetics* would be set up, in which the use of electronic computers will occupies an important place; the plans of the faculties and specialized departments in this field are to be correlated with the staffing needs."

Authors (I)

- **The Synthesis Team**
  - ==Drăgănescu Mihai –Polytechnic Institute of Bucharest(PUB)&National Council for Research==,
  - Petrescu Mircea –PUB &Science Section of the Central Committee,
  - Iancovici Victor and Sucitulescu Nicolae – State Committee for Planning
  - Costake Nicolae – State Statistics Directorate
- The team for drafting a report on the <u>use of computing equipment</u>, organization of computing centers and data processing systems
  - Vasilescu Marinache - Central Statistics Directorate ,
  - Emil, Sucitulescu Nicolae - State Planning Committee,
  - Costache Nicolae – State Statistics Directorate
  - Toma Dimitrie - National Bank of Romania,
  - Kaszoni Francisc, Niculescu Claudiu - Ministry of Machine Building Industry,
  - Rusu Constantin, Rădulescu Dan - Ministry of Finance,
  - Nicolau Edmond, Dumitru Vincenţiu - Center for Economic Calculus and Cybernetics

Authors (II)

- **The team for drafting the report on the <u>manufacture of the computing equipment in the country</u>:**

  - Faur Constantin, Schachter Samson, Momeo Francisc, Ungureanu Ion, Lazar Sandu, Lazar Anca, Nica Lucian, Serban Traian, Poca Dezideriu, Budu Theodor, State Nicolae, Busila Horaţiu, Weissman Jean, Sipos Radu - Polytechnic Institute of Bucharest,

  - Bortes Mircea - Foreign Trade Ministry,

  - Filotti loan - Central Statistics Directorate

- **The team for drafting the report on the <u>training of cadres</u>:**

  - Racoveanu Nicolae - Institute of Petroleum, Gas and Geology,

  - Ciorascu Florin - Institute of Atomic Physics,

  - Constantinescu Paul - State Committee for the Organization of Labor...

  - Florea Simion - Ministry of Education.

  - Vaida Dragoş - Center for Economic and Cyber Economic Calculus,

  - Stanescu Eugen - Central Statistics Department,

  - Tovissi Ludovic - Institute of Economic Sciences,

  - Bumbaru Severin - National Scientific Research Council.

First Results 1967-1970 (I)

- **ICE** - Enterprise of Electronic Computers
- **Ferrite Memory** Factory in Timisoara.
- **IIRUC**-Enterprise for Repair and Maintenance of Computing Machines
- **FEPER**- The Peripheral Equipment Company
- **CCPCE**-The R&D Centre for Electronic Components
- **RCD**-The joint venture Rom-Control Data

First Results (II)

- Faculty of Automation and Computers at TU Politehnica Bucharest

- Faculty of Economic Calculus and Cybernetics, at Academy of Economis Studies (ASE) Bucharest

- CEPECA: a common project with ONU agencies (PNUD and BIT)

- First informatics high schools in the county capitals

- Computing centers and specialized sections in Romanian universities

First Results 1967-1970 (III)

- **ICI**-Research Institute in Informatics for application software and systems
  - BNP- the National Program Library .
  - **CPI**-training centre for IT specialists
  - **CTCE** - territorial centres for automatic data processing and training services in Timisoara, Cluj, Iasi and Pitesti, which would be generalized in all the 42 county capitals.
- **ICPUEC**- Research Institute for Computer Equipment and Computing, subsequently becoming **ITC**
- Computer centres in research-development-design institutes and several representative enterprises

FCE The Computer Factory

Felix Computer

Felix M 18 (1976)

Faculty of Automation and Computers, TU Bucharest

Faculty for Economic Calculus and Cybernetics, ASE Bucharest

"Tudor Vianu" High School for informatics, Bucharest

ITC Bucharest

ICI Bucureşti

CTCE (Territorial Computer Centre) Cluj-Napoca

At present

- there are over 100,000 people in the I&CT sector
- The sector contributes with 6% to National GDP

Domains of Contribution to Science and Technology

- Categories and Functors for the Integrative Science
- Mind and Consciousness
- Science and Technology of Information
- Information Society – Knowledge Society
- Consciousness Society
- History of the Science and Technology

(http://www.racai.ro/about-us/dragam/)

E-Books available on Internet

L'Universalité ontologique de l'information *(Ontological Universality of Information)*, Préface et notes par Yves Kodratoff, prof., Université de Paris-Sud, Directeur de recherche au CNRS -Bucharest, Editura Academiei, 1996.
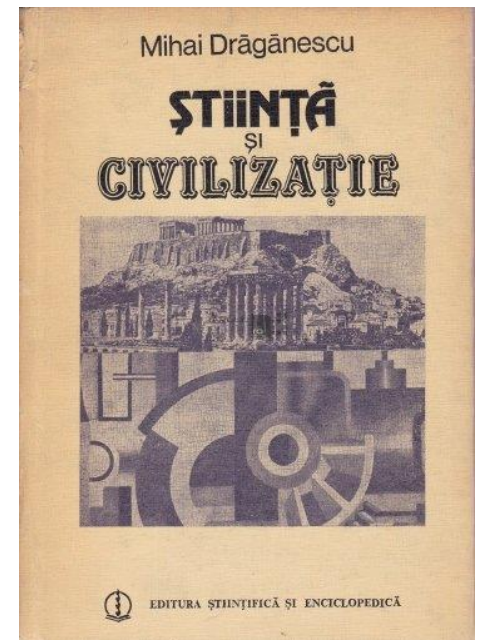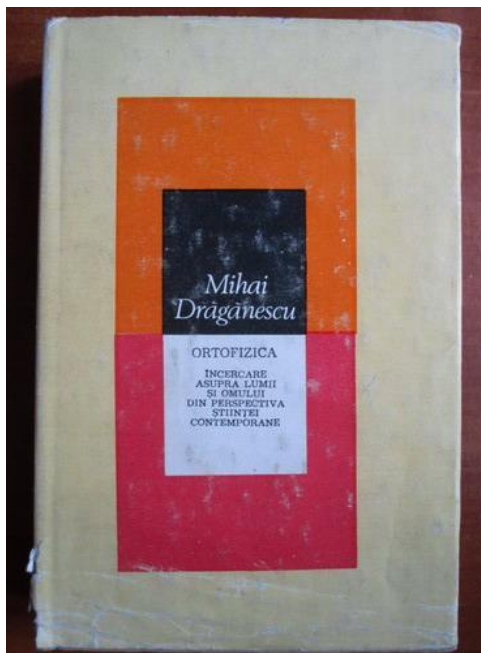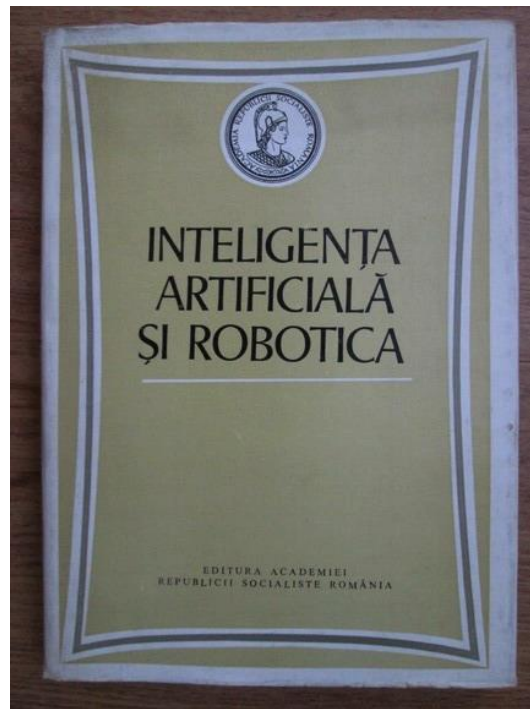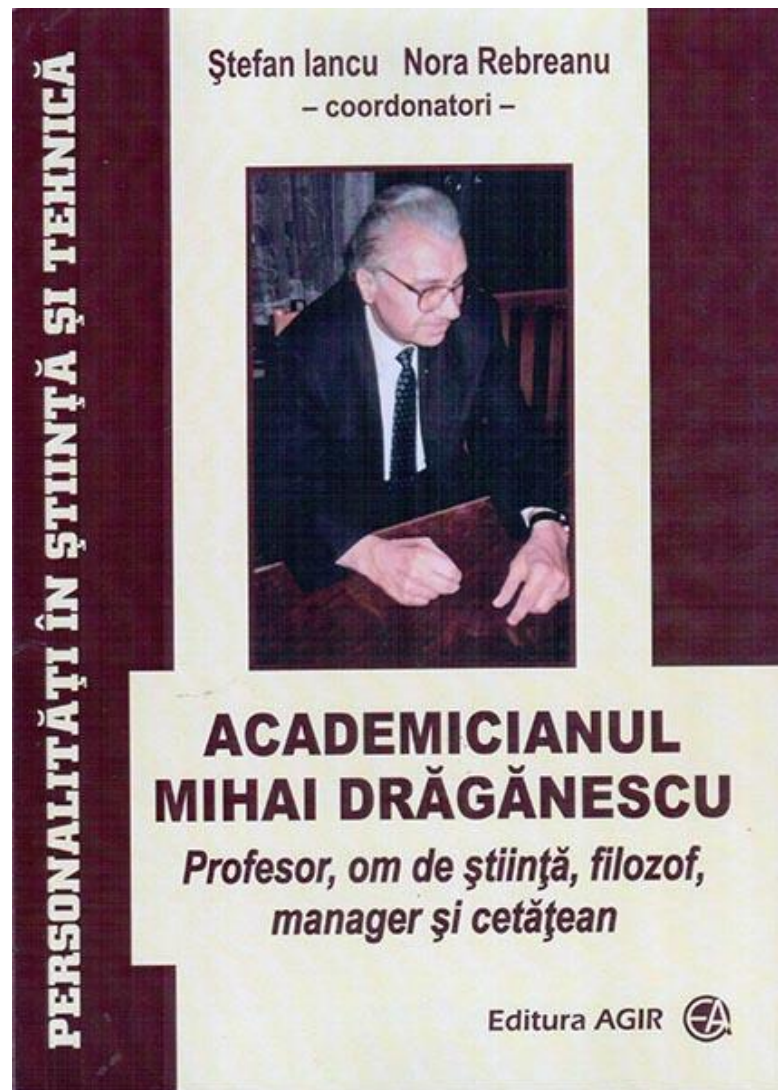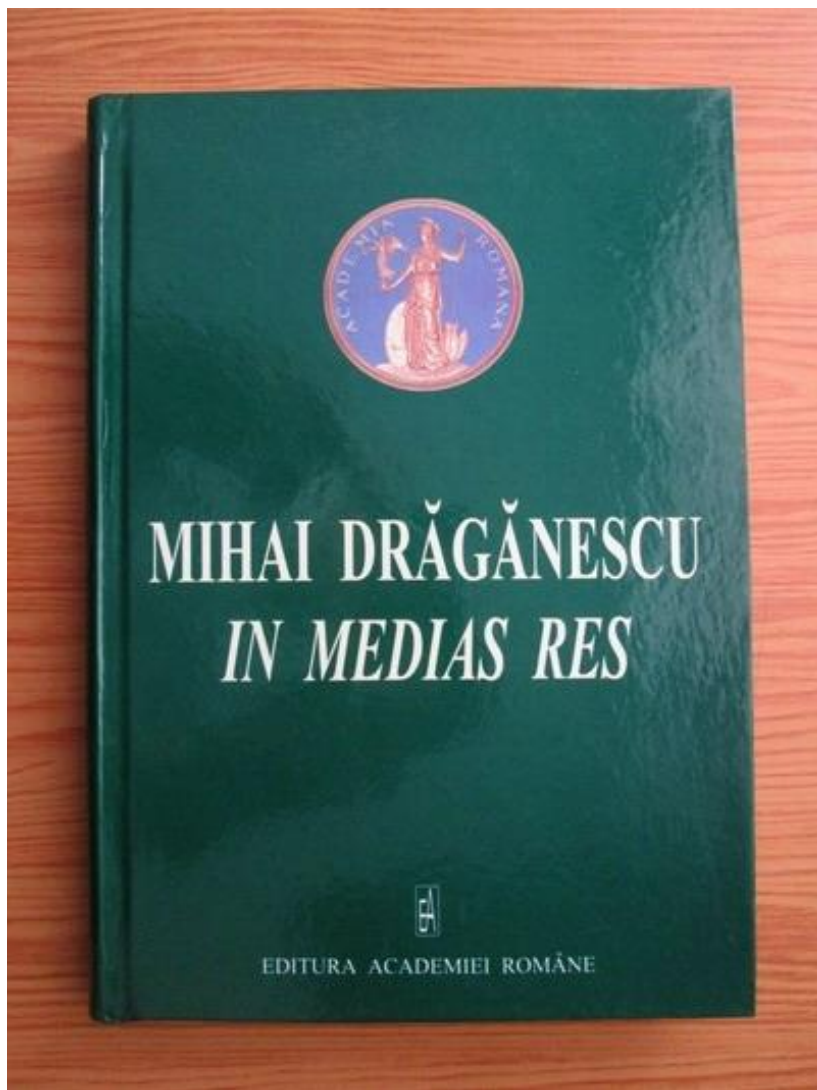
The Depths of Existence, Electronic edition, in English, of a book first published in 1979 (*Profunzimile lumii materiale*), Bucharest, Editura Politică).

Procese electronice in dispozitive semiconductoare de circuit
M. DRĂGĂNESCU
EDITURA ACADEMIEI REPUBLICII SOCIALISTE ROMÂNIA

INTELIGENȚA ARTIFICIALĂ ȘI ROBOTICA
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ÎNCERCARE ASUPRA LUMII ȘI OMULUI DIN PERSPECTIVA ȘTIINȚEI CONTEMPORANE

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IN MEDIAS RES

EDITURA ACADEMIEI ROMÂNE

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ACADEMICIANUL MIHAI DRĂGĂNESCU

Profesor, om de ştiinţă, filozof, manager şi cetăţean

Editura AGIR

"Romanian Civilization" Series ; "The Information Science and Technology" Volume (https://acad.ro/bdar/STI/sti.html)

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  - Theoretical Informatics (Acad. G. Păun)
  - ---
  - Computers (Prof. N. Tăpuş)
  - Communications (Prof. V. Croitoru)

  - Computer Networks (Prof. N Tapus and Acad F G Filip)
  - Artificial Intelligence (Acad. H. N. Teodorescu)
  - Automation (Acad. I. Dumitrache)
  - Industrial Informatics (Prof. A. Davidoviciu)
  - Economic Informatics and Cybernetics (Prof. I. Ivan)

CUVÂNT-ÎNAINTE

În Adunarea Generală a Academiei Române din 24 noiembrie 1998, academicianul Mihai Corneliu Drăgănescu definea Știința și tehnologia informației ca fiind „domeniul multidisciplinar al științei și tehnologiei care stă la baza societății informaționale și care cuprinde substratul fizic al informației, telecomunicațiile, calculatoarele, software, sistemele informatice, informatica teoretică și teoria informației, internetul, tehnologia Web, automatica și teoria sistemelor precum și aplicațiile specifice în cele mai diverse domenii: economie, sociologie, medicina electronica, biologie informațională, filosofia informației etc".

Conținutul volumului de față a fost gândit plecând de la definiția de mai sus și conține capitole în care se descriu, în contextul evoluțiilor din domeniu de pe plan internațional, principalele momente, oameni și realizări care au contribuit la progresul Științei și tehnologiei informației în România și, în plan mai larg, al sectorului TI&C (Tehnologia informațiilor și comunicațiilor).

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ACADEMIA ROMÂNĂ

ȘTIINȚA ȘI TEHNOLOGIA INFORMAȚIEI ÎN ROMÂNIA

FLORIN GHEORGHE FILIP

Coordonator

Last public photo: Acad Draganescu at his 75th anniversary and his wife, senator Nora Rebreanu

Note

A part of this paper was presented at

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8-12 May, 2018, Băile Felix Romania
(http://univagora.ro/en/icccc2018/)

Thank-you for your attention !

F.G. Filip