SI-PCN: The National Cultural Heritage Information System in Romania

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The Information System for National Cultural Heritage (SI-PCN) is a classical centralised inventory system with:

1. National databases, reference databases, and image collection, as information content
2. A territorial network for collecting information, the central Museums and Collections Commission and national information center, as institutional framework
3. Standards, thesauri, and authority files, as conceptual framework and documentation tools
4. Computers and programmes, as technical support
5. Database design, maintenance, and development, information collecting and dissemination, documentation, museum assistance, and consulting, as main activities.

SI-PCN was designed and tested from 1978 to 1981 (using Mistral-2 on the Felix-256 mainframe computer, the only hardware and software available in Romania at that time) and implemented during several years, beginning in 1982. Its principles came out of the 1974 law for the protection of the national cultural heritage, which stipulated a centralised inventory system (for objects, specimens, and monuments), organised on three levels: local (museums and libraries), territorial (offices for national cultural heritage), and national (National Cultural Heritage Board).

The project was inspired by other similar projects of the 1970s, especially the French one. A network of distributed databases was envisaged, connecting central databases in Bucharest with territorial ones, maintained at territorial computer centres, which were also supposed to process the object cards provided by local museums and heritage offices and to send record copies, on magnetic tape, to the Information Centre for Culture and Heritage (CIMEC) in Bucharest.

The whole system was unitary, based on standard cards, rules, thesauri, information flow, programmes, and procedures which, although strict, were flexible enough to enable easy data centralisation, distribution, and development.

Unfortunately, as in many other cases, the budget of the project was underestimated, which made severe cuts and adjustments of the initial plan necessary during implementation.

Despite resemblance to other heritage information systems, SI-PCN is designed to meet the particular requirements of our national heritage features, museum traditions, and material and human resources available at present and in the foreseeable future. One of the first is the epitome of our cultural heritage.
Romanian cultural heritage is in great part the result of a millennial unwritten civilization. Archaeological and ethnographic heritage, the basic components of many museum collections, as well as anonymous art works and numismatic collections need to be identified and attributed (determined) by permanent research work. Our cultural information is, in great part, vague and open to changes (improvements). Few known authors, few dated pieces, many uncertain data are not easy to standardise or to retrieve, sort, and frequently update. Those require both solid, sophisticated programmes which are able to properly treat textual information, terminological variants, and conventions and good, predefined documentation tools.

The project incorporates the experience of the manual heritage evidence system in use between 1975 and 1982. The project team's concern for assuring a smooth transition from one system to another, avoiding unnecessary changes, and keeping continuity in mind suggested in great part the building up of an open system.

Because of the scarcity of human and material resources, compared to the volume of scientific inventory work in Romanian museums, we had to find an equilibrium between collections management and research requirements, to pay special attention to the training of museum personnel. Computerised heritage catalogues can't be a copy of museum manual card files, as some museum directors and curators still believe and demand. Even if all the information in a manual catalogue is transferred into computer files, at high costs, the result will still be a dead repository of information, and the only way the computer could be used would be to sort rapidly and reproduce the overly large catalogue entries. To serve the real information needs of the museum profession as a whole, some radical changes in the thinking of museum people, at all levels, must be made with regard to cataloguing aims, interactive use, and data access. That implies the selection of what is really important to enter into the computer.

The SI-PCN is a general catalogue, covering all periods, from prehistory to the present day, all disciplines, and the whole national territory. It aims to provide a national inventory of heritage artefacts and specimens for documentation, research, and protection purposes.

**SI-PCN Territorial Network**

Romania has more than 600 museums and public collections. In each of the 40 administrative districts (counties) and in Bucharest there are Offices for National Cultural Heritage, which form a network for inventory, protection, and conservation of cultural heritage.

At the central level, the heritage activities are coordinated by the Museums and Collections Commission and the Historical Monuments and Sites Commission, both founded in 1990.

CIMEC is the administrator of the national cultural heritage databases. Hundreds of Romanian museums and Offices for National Cultural Heritage contributed to the national databases and, in doing so, to their own future ones.

**Museums and Territorial Offices**

- Document, determine, and describe artefacts, fill in cards (eventually data entry)
- Send cards (or diskettes) to CIMEC (via NCH offices or directly), as well as retrieval requests, lists of candidate terms for the thesauri
• Receive processed cards (with SI-PCN number) from CIMEC (directly or via NCH county office). Correct wrong or incomplete cards and send them back. Provide answers to documentation requests, requests for information, and statistics.

CIMEC
• Receives cards (for data entry) from museums and territorial offices
• Registers, checks object cards, loads, updates, maintains records, answers queries, and delivers reports
• Sends processed cards back to data deliverers (for use in manual museum files) and eventually copies of entered records, reports, and documentation material.

Museums and Collections Commission
• Finances the national inventory system
• Coordinates and advises on museum collections documentation activity
• Assists in professional training, documentation tools, and general policy of collections documentation.

SI-PCN Information Flowchart

In the not too distant future, some museums will have their own documentation and information services with computerised data collections; they will eventually send only copies of records to the national database, which will raise new problems of compatibility, information flow, file versions, etc.

The National Database
The Cultural Heritage National Database is modular, structured according to the following disciplines: FINE ARTS (ARP), DECORATIVE ARTS (ARD), ARCHAEOLOGY (ARH),
NUMISMATICS (NUM), ETHNOGRAPHY (ETN), HISTORY (IST), RARE BOOKS (CV), DOCUMENTS (DOC), MEDALS AND DECORATIONS (MED, DEC), NATURAL SCIENCES (STN).

In 1992 the national database consists of 450,000 computer records. Another 400,000 object cards are awaiting data entry at our center. The loading rate has become 80,000 documents per year since 1991.

From the very beginning we knew that the quality of information depended on many factors, among them the following:

- Important variations in registration practices and the amount of information available for registration of each object in museums
- The number and territorial spread of data deliverers, as well as disparities in experience and training level of the museum personnel who were to catalogue the objects which varied from one institution to another.

In order to ensure an acceptable degree of information standardisation and scientific verifiability, we introduced a scientific control procedure of cards sent to CIMEC for data entry and processing. Slowing down data entry flow by that, we hoped to gain in quality of database content, and avoid having mistakes or wrong information enter the computer and thus require later updating. That was also supposed to be of help to museums, which received back a new version of correct classification of their specimens and items and relevant information for their own registration.

The logical structure of the national database is flexible enough to withstand changes and, at the same time, keeps data unity and thereby retrieval accuracy.

Data Standards

Data standards (that is, common denominators of data) serve as the basis for both system unity and inter-institutional communication.

Following our museum registration tradition, as well as international documentation recommendations, we established data and procedural standards for our system.

First, we defined the structure, content, and values for museum information. We established different fields and the relationships among them, the rules and conventions for data entry and card fill-in, as well as the terminology to be used. Then we designed the manual and automated procedures for data entry and retrieval.

Some of the standards we defined are common to all disciplines; others have to do with particular information fields in one discipline or another.

We pay very special attention to these problems, as we believe that they are the key points for the future of our data and system. We know very well that we have poor software and hardware and that the only solution is a well structured, although apparently rigid and
disputed conceptual scheme. Activities like passing data between collections, updating information, receiving information from other sources, and sharing information such as authority files to avoid ambiguity and duplication strongly rely on standardisation.
At present SI-PCN faces one of the most important tests of its data and procedure standards.

First, the whole collection of data is being ported from an obsolete platform to a new environment.

Then, it is being distributed, or decentralised and ported to museums that have contributed data.

Above all, SI-PCN has to preserve its most important feature: unity. For that we have developed a data manager dictionary with the following components: data structure, data content, data value, procedures, and gateways.

In the data manager dictionary, which is an open system, we tried to describe the whole domain, considering and logically structuring any possible item of information. Each term is defined, and the rules and procedures it implies are given, for both users and system managers. At the same time we specify the corresponding field name(s) for the same piece of information in other systems we know about. Thus we aim to build a gateway catalogue, understanding that diversity is very important but, at the same time, defending the usability of our data and system.

Of course, for this task we strongly need and rely on the support of:

- Cooperation, collaboration, and understanding between all the parties involved
- Standard principles and consensus on them
- Consent from the Museums and Collections Commission, as a central authority, for the definition and use of museum documentation standards.

The Object Cards

The current object card was adopted as a national standard in 1982. It was considered quite rigid, with its limited number of maximum characters per field, sometimes too many, now and then not enough, its writing in capital letters, its field order and denominations not always suitable for all disciplines. Nevertheless the disputed standard card offered important gains:

- A general form, suitable for direct data entry anywhere
- Easiness for curators to pass from one heritage discipline to another (not having to change the form)
- Economical to print
- Could be used for manual files too (unique size, printed on cardboard, encoded, photo of artefact attached on the upper side).

They had a total of 52 fields, of which only 20 were mandatory to fill in:

System identification fields

- The heritage discipline the object belongs to (e.g., ARH = archaeology)
- Card type (individual: describes one artefact per card; cumulative: describes more objects of a series per card; assembly: describes an assembly, hoard, closed archaeological complex or deposit, etc.)
Identification number and territorial unit

Object identification fields
- Owner, accession number
- Object name, type, and category
- Object attributes: status (if copy or imitation), destination (votive, honorific, commemorative, funeral, cult), artistic style (Dorian, Ionic, Corinthian)

Assembly identification fields
- The name of the hoard, deposit, or closed complex (pit, dwelling, tomb etc.) the object belongs to

Chronology fields
- Epoch, period, culture, cultural context of the discovery
- Date (millennium, century, year, month, day)

Author/producer fields
- Author's name, school, workshop, role

Provenance fields
- Production place (area, country, province, town/center, workshop)
- Place of discovery (country or geographic area, county, town or village, local name of the site and its antique name, if known)

Description fields
- Material and technique, colour, paste, and burning technique (for ceramics)
- Dimensions, weight and alloy title
- Title, image (for inscriptions and plastic representations)
- Inscriptions (and their language), marks, signature, stamps
- Current condition (very good, good, mediocre, bad)

Registration fields
- Photo or photo negative number
- Card number
- Cataloguer name and cataloguing date.

An example of an object record in English:

Record number: ARH8MB000023
Owner: MUZEUL NATIONAL DE ISTORIE A ROMANIEI
Object name: PELIKE; FUNERAL
Group/Category: ATTIC;RED FIGURE POTTERY
Epoch/Culture: CLASSICAL GREEK
Date: S:-4 2/4
Production place: ATHENS
Material/Technique: CLAY;BLACK GLAZE;PAINTING
Dimensions: I:196;DM:750
Place of discovery: CT;C:ISTRIA;S:ISTRIA;L:HISTRIA
The SI-PCN thesauri, which are dedicated to object or specimen description and data retrieval, were designed by working groups of analysts and museum curators (using Mistral-2 software) and include synonyms and hierarchies (on three to five levels). A field approach was used to structure the terminology. There are about 28,000 terms.

The thesauri offer:

• A minimum for quick data retrieval: key words to those categories of data that were considered significant finding devices: classes of objects/specimens, historical and artistic periods, materials and techniques, iconography and decoration, associations
• At least one standard key word in a retrieval field (we accept both thesauri terms and others in the same field)
• Up-to-date scientific terminology, elimination of old-fashioned terms
• Easiness to work with: a reasonable number of basic terms for each discipline
• A working method
• Openness to development and enrichment.

The development of the SI-PCN thesauri: Precise definitions of each descriptor must be added as well as related terms. Additionally, terms used to index written text (scientific literature, archival records, slides, and photographs) must be included in order to cover other documentation fields for museums. We wish to establish translated versions of our thesauri—in English and French—to assure direct access to Romanian heritage information across language barriers and thus facilitate international information interchange.

Image Collection

A manual photo archive of 360,000 black and white photos of objects recorded in the national database, carrying identification data (county, card number, owner, accession number of the object), arranged alphabetically by territorial units, was gathered at CIMEC. It could be electronically recorded in the future.

People in SI-PCN

Curators

Curators are in charge of the scientific documentation of museum collections. In many museums, inventories are not complete, and many artefacts must either be determined and registered or their earlier entries updated. Documentation for each object is prepared in manual form (object cards) by curators, who examine and describe the objects. Museum people and librarians greatly resent the scarcity of modern investigative equipment, of up-to-date scientific catalogues and publications.
Museum curators were systematically trained to fill in cards for the national evidence system and have been initiated into computerised inventories through courses organised by the Center for Cultural and Arts Staff Training and CIMEC.

Analysts
They assure an acceptable degree of information accuracy, both in form and scientific content, before and after data entry; assist users in documentation requests, and special reports; identify priorities of data standards in their discipline; design and maintain thesauri; edit catalogues, newsletters, and handbooks. We used to say that they are the database content administrators.

Database administrators and programmers
They design system architecture and functions, applications and procedures, write programs, and solve technical and compatibility problems. They are responsible for data organisation, access policy, standardisation, upgrading, management and implementation, and data security.

The SI-PCN Lights and Shadows
It is a constant dilemma between "centralised and decentralised". Both approaches have advantages and disadvantages. Usually they are unequally emphasised by parties in dispute according to each point of view. Why keep a centralised system like the SI-PCN in an era of the spread of personal computers? Some reasons are the following:

1. Protection of the national heritage depends on the existence of an inventory.
2. Recovering of information in the new technological environment spares time, years of work, and money.
3. Dissemination of standardised information is simpler by far than bringing together disparate (uncorroborated) local initiatives, which is the problem other countries face now. More and more people are aware of the need to have a common language.
4. In Romania no one would start from scratch in developing local databases because at least part of the information is already in the computer and a copy can be transferred to each museum, as the nucleus of the institutional database. That establishes both the conditions for continuity in the museum's own registration activity and for information sharing among museums and the local-national databases.
5. SI-PCN is a system that people got used to during ten years. Ten years in the life cycle of a system is not a short time! It is enough to provide a tool to judge what proved to be good, and what should be improved in the future.
6. The feeling of continuity is an important psychological factor. It is unbearable for museum people to start again and again the same endless registration activity whenever any technological or administrative changes occur.

What are our priorities in the near future?
1. More for local needs (now we are too far from users)
2. Suitable software and equipment support for national databases
3. Suitable software for Romanian museums
4. More information dissemination, both through computer networks and in written form.

To have a future, two basic conditions are required: human factor and support from official bodies.
The computerised heritage catalogues can be an effective and economical tool. "As with any other tool, though, it is the human factor in the man/machine equation that determines how effective and how economical it is. Data-banking, like writing books and papers, is tedious work that can consume enormous amounts of professional manpower" (Robert G. Chenhall, in Museum News, September 1974, p. 33). There is not enough excellent software and hardware to make a system good, as some might hope. The means are not the end. Collection and heritage documentation must be revalued as main professional and moral duties in the museum field and as the basis of cultural heritage protection policy. That implies proper legislative, organizational, and financial support.

It is true that we did so much, so long, with so little that some now believe we can do anything with nothing. It is hard to establish funding priorities in times of economic regression. But long-run activities such as a national heritage inventory must be among them. We are too poor to lose what we already have.

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