

GRM Report

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Abstract : After more than 30 years of existence, the GRM (Groupe de Recherches Musicales), founded by Pierre Schaeffer and directed by Francois Bayle, remains a very active center of contemporary musical creation. The GRM, Department of the INA (National Institute of Audiovisual) since 1975, located in the "Maison de Radio France", is today well integrated in the french audiovisual institution. This report,together with demonstrations and concerts along the conference, gives an overview of the GRM's current activities : research, production, training courses, concerts, publishing.

1-Introduction

Since our last presentation at the ICMC in 1984 , the GRM has lived a lot of changes, while developping its activities and finding its place in a constantly evolving audiovisual and cultural environment. We have chosen this 1991 conference, corresponding to a first release of a new generation of technical tools, for a description of the GRM 's current activities : research in creation tools, research in musical sciences, training courses, musical and radio production, concerts, conserving, record and CD publishing. This report is associated with demonstrations of new softwares and concerts given along the conference.

2-Research in creation tools

Since the beginning of the experimental music, the search of sound aesthetics has always been linked with the invention of new means in sound production. For the last 15 years, the effort has been directed towards digital techniques of sound synthesis and processing, especially in the fields of electronics, low-level programming, user interfaces and digital signal processing.

This research has come to the achievement of two systems :

- a set of differed time digital sound transformations, known as "Studio 123"
- SYTER, a real time sound processing workstation created by J.F. Allouis, associated with an important library of real-time sound processing instruments.

The current studies aim both the valorization of the existing knowledge in the fields of digital processing of sound materials and ergonomics on recent and costless equipments, and the creation of new tools, answering to the current needs of musical production thanks to the use of new technologies. Six development axes have been defined :

- SYTER System. Development of new kinds of sound processing algorithms; finalization and documentation of the main softwares; communication via an Ethernet network with the other GRM sound processing workstations.

- The Acousmographe : a Macintosh software for the graphical representation of sounds and music based on sound morphologies (as demonstrated along this conference).

- DSP Station : HyperCard environment for DSP sound processing algorithms, associated with a set of original and high performance sound transformation algorithms (as demonstrated along this conference).

- New gestual interfaces. This research axis includes two forms of developments :
 - "Les MacSoutils du GRM" : MIDI generation of sound morphologies with MAX (as demonstrated along this conference)
 - prototyping of a retroactive gestual physical interface for the generation of MIDI data, well adapted to the composition of electroacoustical musics.

- Sound projection system. This device, including functionalities of automation and polyphonic digital signal processing, will provide the composers an assistance for the multiphonic diffusion of their works in concert through the Acousmonium, the GRM orchestra of loudspeakers.

- Restauration of old recordings. The first aim of this research, lead in collaboration with the Department of Audiovisual Archives of the INA, is the design of algorithms for the subtraction of the tape noise in old recordings (see the DSP Station demonstration).

3-Research in musical sciences

Since its creation, the GRM has led a fundamental reflexion oriented towards analysis. Referring to Schaeffer's works on the "sound object", current studies are applying to the analysis of electroacoustical musics methods and models taken from human sciences such as psychology and semiotics. In absence of scores, this music can only be described through an analysis of composition and listening strategies.

Indirectly, this research brings a contribution

- 1) to the theory of musical analysis in general,
- 2) to the study of production and reception behaviours.
- 3) this last point has generated large applications to a pedagogy of musical creation for very young children.

4-Training courses

Two kinds of training courses are organized by the GRM :

- training of composers at the original tools developed at the GRM; the GRM welcomes every year about 30 composers for one week courses, in which they learn how to use alone the specific creation tools developed at the GRM. These courses are free and the candidates are accepted upon presentation of records.

- two workshops initiating to the techniques of composition of electroacoustical musics, in collaboration with the ADAC, a Cultural Association of the City of Paris:

- Computer Aided Electroacoustical Music workshop
- Digital Sound Musical Tools workshop

The duration is of three months. A financial participation is required.

5-Musical and radio production

The GRM welcomes every year about 20 composers for the composition of musical works. Different forms of productions are possible. The composers have access to professional sound production studios and original creation tools developed at the GRM.

The GRM also produces every year about 100 radio broadcasts for the national radios "France Musique" and "France Culture".

The production activities are located in the studio 116, including 3 production cabins, specialized in specific fields of activity:

- the 116A, rebuilt in 1989, is a polyvalent multitrack studio, with a 32*32 DDA DCM 232 inline console, a Studer A800 16 track tape recorder, 4 stereo tape recorder and other peripheral devices. It is mainly used for multitrack recording and mixing, and the last stages of musical production.

- the 116B is the largest cabin, equipped with 8 to 16 voices of amplification and loudspeakers and a configuration built around the SYTER system; it is used for rehearsals, recordings, work on spatialisation and on sound materials with SYTER.

- the 116C is currently devoted to musical production and is equipped with a prototype console associated with a number of analog modules of synthesis and transformation, a MIDI configuration with a Macintosh and several stereo tape recorders. The reequipping of this cabin, planned for the first months of 1992, will make it performant and well adapted to radio production and MIDI synthesis.

6-Concerts

The GRM produces every year dozens of concerts in France and abroad with a movable system of diffusion and the Acousmonium, an orchestral device of spatial sound projection, associated with more than 50 loudspeakers. The musical season of the Cycle Acousmatique offers in its program 30 musical works, half of them a creation, in 12 concerts, from January to June.

7-Conserving- issuing

The GRM Repertory, more than 2000 titles since 1948, needs a permanent activity of conserving, copy, and documentation

The publishing of a record and CD collection, allows the diffusion of the GRM works to a large public. A hundred of titles have been edited in 40 discs and 13 Compact discs.