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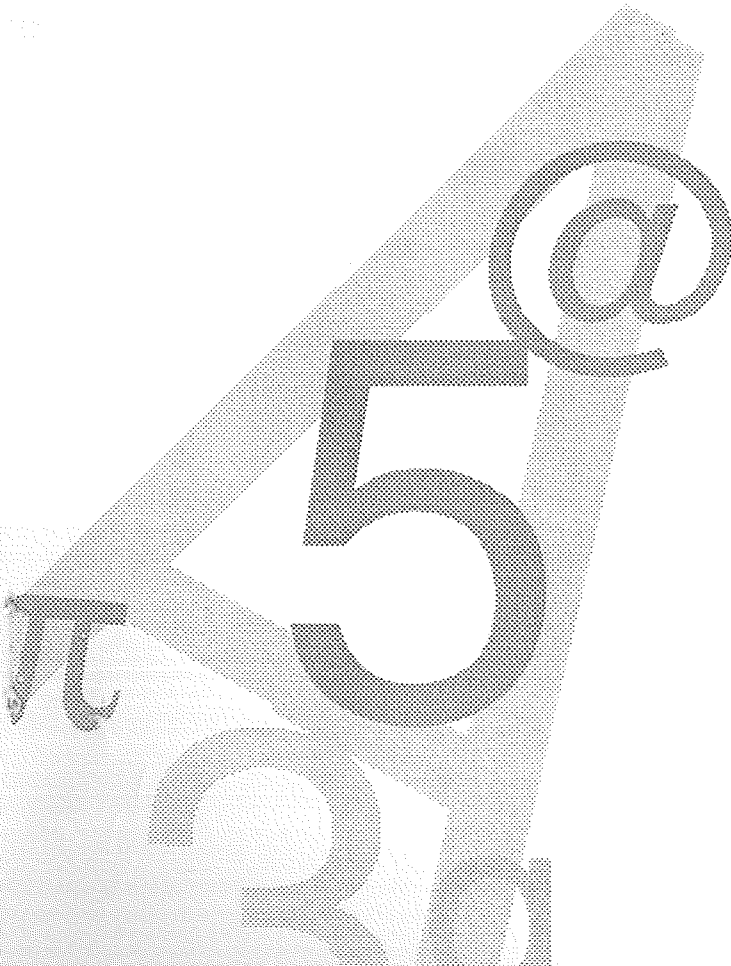
CATS
Computer Aided Theatrical Score
Esprit Project 20340

TV, Cinema, Theatre, Drama Schools Requirement

Patrizia Palamidese, Gilberto Tofano
and Giuseppe Scapellato

CNUCE C96-25

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CATS Project Series

1. **User Requirement**
   Patrizia Palamidese

2. **TV, Cinema, Theatre,
   Drama Schools Requirement**
   P. Palamidese, G. Tofano and G. Scapellato

Series Editor

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CATS

Computer Aided Theatrical Score

Requirement Collection for Theatre and Drama Schools

1. SPECTACULAR ENTERPRISES

1.1 The Lliure Theatre

The Teatre Lliure is a private theatre which receives also public funds. The Theatre is administered by a private foundation which includes also the four public administrations which finance it: the Cultural Ministry (Madrid government), the Generalitat de Catalunya (autonomous Catalan government), the Provincia de Barcelona and the Municipality of Barcelona. It is also supported with public funds. The Foundation includes also representatives of private organisations such as the Association of Actors and Directors of Catalunya (a professional trade union), the Spectators Association of *Teatre Lliure, the Cooperative Teatre Lliure [which founded the theatre in 1976]*, the Cooperative La Lleialtat (a centenary cooperative of workers which is proprietary of Teatre Lliure building) and various people of the cultural Catalan and Spanish world.

The theatre realises these forms of performances: play, operas and concerts with its Camera Orchestra, existing since 1985 and specialised in contemporary music. There is also an associated balled company, the Companya de dansa Gelabert-Azzopardi, which has an autonomous administration but realises performances in co-production. The shows produced are in Catalan language but, occasionally, they are realised also in Spanish for distribution in the rest of Spanish.

The theatre has 27 permanent employee but the working people, including external collaborators, can rise up to 70 people, especially when more than one performance are active at the same time such as a theatrical performance on exhibition, another in production and a musical.

The theatre is managed by a General Director and a Direction Board which includes also five other people: the Economic Director, the Literary Director and three people from the funding nucleus. The Economic Department includes the Economic Director, the Administrator, administrative people and the Production Department. The Production Department deals with performances production and also coordinates the Workshops of costumes and set designing. There are two Production Heads, one for the theatre and one for music, and these production equips can be enlarged with external collaborators for each different production.

The Technical Department includes the set designing and the costume workshops. The set designing workshop includes the technicians who build the scenes or manage the devices during the performance. The costume designing workshop includes the technicians who make and maintain costumes. Are part of this departments also professionals who work in specific fields such as light, sound and stage management. The Stage Manager or Regisseur is responsible for the good functioning of everything during the public exhibition.

The External Relations Department is responsible for the relations with the press, the other mass media, publicity, the public (i.e. ticket sell, hostess, ...).

The Image Department works on graphics, publishing, photography. These last departments are coordinated by the Literary Director who is also the dramatist of the theatre.

At Teatre Lliure there are some computers distributed in this way: 6 Mac, 2 PCs. Another PC is connected to a bank office which sells directly show tickets. All the computers are not much powerful and they are office automation activities oriented. They have no multimedia or special I/O devices , like CD-ROM, connected to them. Many kinds of word processors (Word, MacWrite, and so on) and FileMaker are installed into Mac computers. At the moment they are not connected to a local network or to Internet, but Teatre Lliure staff well knows Internet and WWW capabilities.

A new site for Teatre Lliure is being built because the actual site is not enough for all forecast activities (orchestra and permanent ballet company); this project will be finished

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Requirement Collection for Theatre and Drama Schools

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Credits

This document is based on information provided by CATS users who are professionals working in Theatre and Drama Schools. These categories of users are well represented in the CATS consortium by the institutions and people listed below. A special contribution has been given by the Theatre Director Gilberto Tofano as external collaborator of the CATS Consortium.

CATS Partners

Lliure Teatre
Barcelona, Spain

Guillem-Jordi Graells	Literary Manager and Dramaturg
Lluis Homar	Manager and Director
Xavier Clot	Light Designer
Gina Cubeles	Set and Costume Designer
Aurora Rosales	Chief Producer
Toni Rodriguez	Administrator

Institut del Teatre
Barcelona, Spain

Pere Planelles, Jaume Melendres	Directors
Francisco Rodella	Set Designer (Lighting)
Juan Jose Abellan	Writer
Alfred Cases, Joan Baixas	Puppet and Visual Theatre teachers
Juanjo Guillen	Set Designer
Agustín Humet	Musician

Union des Theatres de l'Europe
Paris, France

Eli Malka	Director

Other Users

Other groups of users, outside the CATS consortium, have expressed their deep interest in CATS objectives and have supplied some useful additional information which has been used to complete the requirement description.

Accademia Nazionale d'Arte drammatica "Silvio d'Amico"
Rome, Italy

Luigi M. Musati	Academy Director
Domenico Polidoro	Theatre Directing teacher
Giuseppe Bevilacqua	Speech teacher
Carmelo Biondo	Set Design teacher
Monica Vannucchi	Dance & Choreography teacher
Marco Brunetti	Set Design teacher
Ing. Rita Grunspan	Computer Consultant
Jurei Soleri	Light Design teacher

Teatro Politeama
Cascina (Pisa), Italy

Garzella	Theatre Director and Manager

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in three years and it is forecast the design of informatics facilities for the new site where it will be necessary to create a computer local network for exchanging information.
As soon as possible it will be bought a Power Mac provided with CD-ROM and modem for accessing the net, using electronic mail and fax facilities, and connecting to Internet.
At this moment the theatre does not own special software like CAD or multimedia systems, but its technicians are familiar with such programs (for example Autocad, light rendering modules, costume design applications).
Teatre Lliure produces an average of 5 plays, 1 opera, 2 dance spectacles and 6 thematic concerts. Not every year an opera is produced. Sometimes, in place of an opera a musical is produced, which comprises concert, play and ballet. Thematic concerts can involve the production of a set design.
Production includes three phases: pre-production, production, exploitation.
Pre-production phase can go on for years because some choices are taken very early or texts which are in program are postponed to another theatre season.
Production goes on about two months. Sometimes building workshop (set and costume design) start before rehearsals begin.
The exploitation is the phase in which the production is proposed to spectators during two phases: the presentation in the permanent theatre and the tournée

1.2 The Institut del Teatre

The Institut del Teatre is an educational institution dependent of the Generalitat de Catalunya. This school of Theatre imparts disciplines related with the drama art as Music, Dance, Set Design, Drama Writing, Direction, etc. The number of the permanent staff is estimated between 20 and 50 teachers. Its teachers are actually in touch with the professionals world and it is not rare that many of them develop collaborations in commercial performances. The Institut del Teatre is conceived as an open school where students perform their activities in two theatres inside the school and people can go to see them. The Institut del Teatre has more than 75 years of activity .
Eight teachers were interviewed:
- Directors: Pere Planelles, Jaume Melendres
- Set Designer (Lighting): Francisco Rodella
- Writer: Juan Jose Abellan
- Puppet and Visual Theatre teacher: Alfred Cases, Joan Baixas
- Set Designer: Juanjo Guillen
- Musician: Agustín Humet.
Set Design course, involves the work with CAD packages. In this work, the students have to design a stage and its particular elements (such as objects, lights...) as a set designer would do. On the other hand, many teachers also use computers for their own work.

The table below collects the information about this item.

Area	Computer	Hardware	Software
Set Designer (Lighting Technician)	PC 486 8Mb RAM PowerPC 16Mb RAM 120 MHz	CDROM	Autocad (Design) Lightwright (Lighting Designer) Express-Track (L D) CandlePower (L D) MacLux Pro(L D) Argus(L D) Video Shop WriteNow (Text processing)
Writer	Mac		ClariceWork (Text processing)
Set Designer	PC 486 16Mb RAM	TARGA PLUS (graphic board)	Corel Draw Animator 3DStudio
Musician	Mac	MIDI Adaptor	Finalle
Set Designer	PC486 8Mb RAM		Autocad (Stage Designing and Costume designing) 3DStudio

Some teachers are familiarised with the Internet and know about the existence of WWW service. The Institut del Teatre has a Web Page and a local network.

Every year in the Institute del Teatre, teachers propose to the students several works to do. In general they must develop six works to pass the course. It depends of the teacher the kind of works (plays, performances, workshops, musicals, ...) and also if these works must be realised with the help of computers. Francisco Rodellas (lighting design) use computers for the whole creative process, he thinks computers can be useful in all the phases of his production. Besides, he thinks they could be particularly useful to coordinate the movements of the floodlights. Juan Jose Abellan (Writer) consider computers useful in the documentation phase. He is interested in the availability of files with the historical notes, clothes, and other performances of the play. Andreu Rabal (set designer) proposed two phases: the creation of a documentation visual database (with artistic styles, furnishing...) and Design Spaces distribution, 3D visualisation avoiding the use of a scale model.

From the point of view of the directors, it seems that the conflictive phase would be the study of the interactions between the elements of the show (lights , sounds) with the objects, characters and circumstances. Pere Planelles (Director) exposed the necessity the system could control the interactions of a high amount of characters at each moment (15-30 characters). Guillen (Set Designer) added the hard task in his work is related with the design of the scenes of the play and objects. He draws them in graph paper.

2 PRODUCTION PHASES and ACTIVITY STAGES Description

2.1 PHASE 1 : PRE-PRODUCTION

* Pre-production phase begins from the choice of a Play and it ends when Rehearsals begin

Stage 1 - TEXT analysis and processing

* In this Stage, after a Play is chosen according to the general cultural and financial policy of the Theatre, the Director and the dramatist work on its text in search of its inner thematic structures (psychological, social, historical, poetic...) and dramatic structures (interweaving of one or more plots - interrelations and conflicts between single Characters or groups...)

* To understand better these structures and their meanings, sometimes a graphic visualisation is needed. Sketches and diagrams are made, representing Plots interweaving - Characters interrelations - Thematic classification, etc.

* As soon as the text it is chosen some decisions must be taken about use permission, copyrights, translations, text adaptations respect to the production and to forecast costs.

* According to Staging conception, excessive length or budget considerations, a Text can be shortened, some Characters eliminated, Scenes moved onward or backward. The Text is then segmented and its parts enumerated to make rehearsals organisation easier. The dramatist together with the director uses a word processor to process text. Sometimes the text is captured from paper using scanners, sometimes it is already on a floppy disk provided by the translator. The result of this process is the Script.

* Variations in Text Stage could be:
- the choice of excerpts from disparate texts (Plays or other) to compose them in a Script around a dramatic idea.
- the adaptation of a Novel in the form of Script
- assisting a Playwright who's writing a new Play

Stage 2 - Staging Project IDEATION

* In this Stage the Staging Project takes shape, trough a creative mental process of imagination (as specified in THEATRE SYNOPTIC TABLE) To memorise random ideas and to organise and communicate them, it would be much needed at this stage a visualisation and simulation Computer support to the Script/Notebook.

* In this Stage comes also to expression a transversal element which regulates all the other Performance elements: RHYTHM. It is never mentioned in this document because it is inherent to every artistic task, as the Arts of Representation are based on musical laws much more than they are based on rational processes: "Tempo" and "Concertato" rule Acting and the whole Performance.

* (Note: the creative function impersonated by the Director with his inner imagination process is substantially coincident with the work that can be done by a group (a class in a Theatre School, or a Seminar, or an independent Actors' group) which invests its non-profit work and time in searching a text for themes and expression through free improvisation, then noting and fixing the results).

Stage 3 - Staging Project DEFINITION

* Here the Staging Project reaches its definition through the collaboration of the Director with the other artistic professionals involved (as specified in THEATRE SYNOPTIC TABLE). Each Professional interacts with the Director basing his contributions on the established dramatic patterns, which are the common framework to reach style and expression coherence.

* All performance elements are defined in collaboration, except .Acting (psychological insights, voice intonation patterns and movement) for which the Director is directly competent. His ideas on the matter are memorised and kept, to work on them with the Actors during the Rehearsals.

* Note: While Phases tend to develop incrementally (never completely succeeding), Text, Ideation and Definition Stages never follow an incremental process and cannot be dissected in separate elements. These activity Stages are an interdisciplinary circular process of feed-back, where ideas are interactively exchanged between all the professionals involved, jumping back and forth from one Performance element to the other.

* Note: We must mention at this point Opera (and also Operetta and Musical Comedy) where the central role of the Director is coupled with the Orchestra Director dominating role, while dramatic analysis is coupled with, and ruled by, musical analysis.

* The director and his/her assistants choose the adequate actors for the play or performance (Casting).
As soon as the director has decided casting the production manager draws up a contract with each actor and with all the other people which are involved with the production.

* Before rehearsals with actors the directors wants:

a) to see the scene space. The model is too brittle and a computer simulation is better.
b) to see light distribution and to have an approximate idea about light effects.
c) to state movements for each actor

* The set designer and the costume designer discuss with the dramatist, which makes the needing historical researches, and with the director. Then they produce drafts and sketches, gather examples and then they present a first proposal. The budget is calculated together with the production manager and the administrator. When the set design or the costume design is accepted by both the director and the administrator then the executive project is made and the final budget is stated.
  The set designer and the costume designer rely also on external enterprises for the realisation or to buy some elements.

* The light technician makes the light design after the set design is completed. He discusses with the director and the set designer to know what kind of environment or atmosphere he must create. To create all the lights effects the light technician uses projectors covered with special aspics.

Stage 4 - Cost EVALUATION and PLANNING

* This Stage should have an incremental development, but it is a very difficult task for the Production Manager to follow all the Pre-production Phase to catch each Staging requirement as soon as it appears in Definition Stage, to inventory it and to evaluate its cost.

* In this Stage the Artistic Staff and the Production Staff confront each other to check the real need for every Staging requirement. On the basis of this Cost/Need Evaluation a final draft of the Production Budget is made and the Production Plan is confirmed, appearing on the Production Timetable.

2.2 PHASE 2 - PRODUCTION

In this Phase all the technical Operations of the Implementation Stage (Building - Making - Recording - Assembling: as specified in THEATRE SYNOPTIC TABLE) are made and coordinated with the Rehearsal Stage.

Stage 1 - IMPLEMENTATION

* The musician together with the director prepare music pieces. The director decides the timeline of music: for examples he wants to fill an empty space in one scene or to put in evidence the passing from a scene to another one. Then the musician proposes some music pieces recorded on tape cassettes or he composes his own music until the director is satisfied.

Stage 2 - REHEARSALS

* Rehearsal planning.
Each spectacle has its production manager. He projects workshops activities and coordinates the use of theatre spaces so that different activities does not overlap.

* Rehearsals
The director and his/her assistant rehears with actors all the elements that were stated in the pre-production phase. Of course rehearsals does not involve only actor movements, but also the processing of each character. This is a very private process and it cannot be pre-designed.
  During rehearsals the assistant notes all the changes that are to be made to the original design. So he makes some annotations on the proof of the text then changing the original text and proposing each time a new version of the text.

The coordination between these two Stages of the production phase depends on financial resources and organisation capabilities of the Theatre.

We give three examples :

Case 1 (the most unfavourable, but also the most usual):
Actors and Music Rehearsals and Implementation are parallel - Coordination and synchronisation of all the Performance elements takes place in a short period at the end (10 days)

Case 2: the required objects (Set elements, Props, Costumes, etc.) arrive one at the time all along the Rehearsals and are coordinated in a short period at the end.

Case 3 (the most favourable, but also the most unusual): for the large resources of the Theatre and/or because of the importance of the Director, when the Rehearsals begin everything is ready and the Performance elements (Sets with furnishing and props, Costumes with accessories, Music, Lights, Acting) are used, coordinated, synchronised and perfected all along the Rehearsals.

Teachers suggested the capability of modify intonation in speech. Teachers that have worked with midi systems thought the possibility of getting a real sample of different human voices with different intonations. We explained them our doubts about getting good results with this kind of system.

In the pre-production phase it should be useful to have synthesised voice for a first elocution of the speech text. Of course different characters must have different voice timbres.

During the production phase it is important to have the interpreters natural voice.

4.3 "Set and costumes"

The user requirements for this point are the following:
·   The existence of different standard stage models . Set designer consider interesting to have a collection of standard stages commonly used for the representations . The stages proposed were:

> Roman Stage (with 180 degrees)
> Circular Stage (with 360 degrees)
> Horseshoe Stage (with 100 degrees)
> Footbridge Stage

·   The existence of different types of curtains (opening from down to up, opening from the middle to the sides, Venetian curtains)
·   Possibility of creating or symbolising middle transparent surfaces such as gauze panels, commonly used in theatre .

Usually objects (tools) which are used on the set are not very peculiar, but are common life objects. The set designer search for the objects already standing in the theatre store or in ordinary shops. Usually new special objects are not build.

For this reason it is enough that CATS has a common life object database (table, chair, and so on). In CATS it is not important a high level of details in the object drawing; instead it is important to execute some actions on the objects like to move them around the set or to see them from different points of view.

- About the lights:
It seems that lights are an important functionality for them. Their suggestions were the following ones:
> - Simulation of intense and non disperse floodlight (Spotlight) and possibility of
> > - changing its direction in real time
>   Creation of shadows. It can be necessary to create visual effects and in certain kinds of theatre   such as Chinese Theatre, Visual Theatre.
> - The capability of changing lights places in real time to study the effects of light in the scene.
> - The capability of importing/exporting DMX format (DMX seems to be an standard in lighting   programs. This format contains information about number of lights, position, colour,
>   displacements in time, intensity) . More information may be provided by Francisco Rodellas (set   designer- lighting specialist).

- About costumes
      The idea of simulating realistic clothes is rejected. If the idea of simulating schematic characters is accepted, clothes will not be necessary. It should be a discussion point.
Women costumes are useful sometimes to have an idea of the volume occupied by female characters. It should be useful to represent men and women with different stylized figures.

4.4 "Other objects"

Visual Theatre uses mobile objects as a kind of characters. These objects have arbitrary shapes and they are made of every kind of materials (from plastic, wood, to paper, etc). Their shape can vary along the time (inflated objects) and in most cases the lights create special effects on their appearance. Teachers proposed the capability of using certain geometric primitives to design special objects such as spheres, cubes and surfaces.
The system might manage with movable panels and surfaces to displace them along the scenery. This capability could be useful to hide and lay zones of the stage.

4.5 " Sound and special effects"

The system should import/export MIDI format or be itself midi compatible.
Capability of editing the soundtracks in the time line of the play, visualising the sound tracks with other events that occur at the same time and possibility of modify this soundtrack.
Capability of mixing special sounds with music, concretely synthetic voice.
Existence of an archive with special effects or capability of importing them from a CD-ROM (discussion about the sound formats).

4.6 "Cost and resources planning"

The business manager doesn't work on details, but he deals with the general planning of economic resources.

4.7 "Organisation"

The system might have an Agenda to coordinate the activities. In the Agenda, it would be specified the tasks to do in the first week, the second week etc and the status of the activities.

He is responsible for all the administrative operations of the Theatre related to incomes and expenses and controls their execution in accordance with the yearly Budget: He is also in charge of the Box Office

Production Manager

He is the chief organizer of production activities: His task is to prepare and maintain the financial and organizational Production Plan for every Play that will be performed: In accordance with the Director he lays out the general Time-table for all the artistic and technical operations needed and he follows and checks their execution, distributing daily the related schedules: In well organized Theatres he follows every activity stage of Pre-production phase, in order to be informed early about incoming requirements, and transfers this information to the Technical Manager, the Stage Manager and Chiefs of the technical Teams

Playwright

He is a writer with a special talent for Dramatic Art, which is "live representation of characters, actions and environments": The mainstays of dramatic art in history were in fact great Theatre professionals, mastering all the performance techniques, like the Greeks, or Shakespeare or Molière. A contemporary Playwright often works in collaboration with a Director and follows the production with professionals understanding. (see also "Play")

Dramatist

He is an expert of Theatre history and Dramaturgy, which is "the body of drama composition techniques". His role in a Theatre is to analyze and select plays and to identify cultural and stylistical guidelines to assist the Artistic Director in forming the yearly program of the Theatre: He has also the task, if needed, to adapt plays according to artistic choices and production requirements.

Director

His role is the most central one and has a creative and coordinating function that makes of it the starter of the whole production process. He has the task to ideate all the composing elements of the performance and to coherently invent all the staging solutions or to inspire his collaborators, giving them key ideas, to invent the required solutions according to their competence. The contemporary debate on Directors' role as hampering Actors' spontaneous creativity, doesn't change the identity of this central creative and coordinating function, both in the case of a single professionals developing his lonely creative mental process, or in the case of a group collectively working on the ideation of a Show. Often the Director is (as a Chief of Company of old) or has been an Actor, who stepped aside to better control and lead the harmony of the ensemble.

Actor
His role is more than central : Theatre is acting, therefore the Actor is the core of Theatre. A Live Performances Actor needs to have many talents and master many techniques, pertaining to voice intonation, body movement, psychological insight, sense of timing and space, controlled amplifying of expression to reach a distant public: Dialectics and interaction between Actor and Director are very productive.

Set Designer
He has the task to ideate and design in close collaboration with the Director, the visual environment that surrounds the Actor and his actions: the Sets, with Furnitures and Properties (Props). He designs all these elements artistically and technically and follows to the end their building and painting, selecting materials and giving his instructions to the Technical Manager and the Stagehands Crew in the Sets Workshop. Often Set and Costumes Designer are the same person.

Costumes Designer
He has the task to ideate and design in close collaboration with the Director the full costumes of the Actors, artistically and technically, making a research on fabrics, cloths and other materials together with the Dressmakers Head. He follows to the end the Dressmaking works and all the dress-fitting sessions. He must be an expert in epoch dress-cutting.

Composer
His task is to compose the music needed by the Performance or to select and edit existing music pieces, in close collaboration with the Director. He follows the music recordings, working with the Sound Technician or, if music will be live, he takes part in the music rehearsals in collaboration with the Orchestra Director (if he is not directing himself). If the Play is a Musical Comedy with songs he also follows the Actors musical training (see also "Music Composing")

Choreographer
His task is to ideate, if needed, the dances of a performance and to direct their rehearsals, training also the Actors if they are not Dancers (Many Theatres include in their artistic staff a permanent dance teacher taking care of Actors body fitness and training) He also assists the Director if a specialist help is needed for specially stylized Actors movement.

Light Designer
Coming from the parcelling organisation of industrial Show business, the specialised role of Light Designer entered not long ago also in Art Theatres, with their artisan-like ways of production. But even today many experienced Directors would not think of delegating this function and create their lighting with the assistance of experienced Chief Electricians. Therefore to fit this function the role of Light Designer must not be a merely technical one As Set Designer, with which he works in collaboration, he has to create the aesthetic values of Stage environment and design the immaterial Set made of light. He needs also high level technical skill and experience to select the right amount and quality of equipment, position and aim the spotlights and sequence the lights movements so as to reach the effects required by the Director.

Sound Technician
Also this role is not a merely technical one. When there is not a live Orchestra, he makes all the original music recordings (or edits the selected existing music pieces) and he edits the complete soundtrack, selecting or creating sound-effects and mixing them with music. During the Performance he runs the soundtrack, a task requiring a special sense of timing and a very good musical ear.

Assistants
A Director has one or more Assistants. In large productions made by important Directors, there are also **Assistant Directors** (young Directors who already direct Performances of their own) who assist closely the Director from his first researches in Ideation stage and through all the pre-production and production phases. They run parallel rehearsals or full rehearsals in his absence, follow and coordinate the work of the artistic collaborators, and follow Actors preparation and training. They take part in all Production meetings. An Assistant Director in turn has to follow every performance to check acting quality and performance execution. They have also the task to note on their script all the Director's staging choices about acting, movements, light cues, sound cues etc. The **Director's Assistants** (usually beginners and graduates from Schools) assist the Director as a link with Production staff and Technical Teams. running also for all sort of small tasks to learn the craft.

Technical Manager
He is the link between the Production Manager and the working teams. He must be an expert in all the technical aspects of the production, specially for Set building and Lighting. He plans and checks working schedules and has the task of choosing and purchasing materials and equipment,

Stage Manager
A great responsibility is attached to this role. In the rehearsals and during performances the Stage Manager is the absolute master of the stage and correct functioning is in his hands. Before the beginning and during intermissions he has to check that everything is in order and ready to action on the stage and behind the stage, and that everybody, Actors and Workers, are in their place. He has noted in his script the cues of all performance operations (Actors entrances, Sets changing, Light cues, Sound cues etc.) and has to signal them in time. After the Show he has to check that the stage is left in perfect order and ready for next performance. He is responsible for Actor and Workers behaviour and discipline and he can fine them if needed. Therefore he follows the whole performance preparation during pre-production phase to be informed early of incoming requirements and to give his experienced advice to the Director and his staff.

Chief electrician
He directs the work of the Electricians Crew and reports to the Technical Manager. His task is to prepare all the equipment and position it before and during light rehearsals, following the indications of the Light Designer. During the light rehearsals he annotates on his script the sequence of light cues as decided by Light Manager and Director. He programs them in the computer for later execution during the performance.

Chief Stagehand
He directs the work of Stagehands Crew during Set building in the Workshop, during Set assembling on the Stage and operating and changing the Sets during performances

Propman
He is in charge of making or renting all the properties (props), i.e. all the objects needed by the Actors for the action, which are not part of the costume or do not have only a decorative function on the Set. He has to check before the performances that all the props are in the right place for the Actors to take them.

Dressmaking Head
She directs the Dressmaking Workroom, assisting the Costumes Designer in fabric selection, dress-cutting, dress-fitting sessions with Actors and all along through rehearsals until Dress Rehearsal, to check and make all the needed corrections and modifications. She is usually an expert in epoch dresscutting. Some Dressmakers must be present in turn during performances to assist the Actors in wearing the costumes or repairing them.

6. WORKING MATERIALS

Play
The Play is the written text of Actors' dialogues. This is the only level of the Performance appearing in written form. Once, no *Stage directions* appeared in a text, except very short ones ("Exit", "Enters", "Trumpets"...) or those included in Actors' cues (BERTOLDO: "Ta ta ta" for knocking at the door). All the other elements of the multimedia art of Theatre as classified by Aristotle (ethe - dianoia - lexis - melopoìa - opsis : moral - logic - speech - melody - visuality) were left to the knowledge of traditional craft or to the improvised invention of the professionals. Only in modern times (with the development of dramatic analysis and a new organisation of Theatre practice around the role of the Director) Playwright begun to add longer Stage directions describing psychological motivations, behaviour, actions, characters look, costumes, sets, light, etc.
A Play is printed in a book. typed or manuscript, according to the level it reached in its literary career. It is divided in larger time units (the *Acts*, one to five) and in *Scenes*, which are action units to whom a given number of *Characters* participate: a new entrance or an exit mark the passage from scene to scene. The dialogues are divided, or, we might say, "itemized", in *Cues*, headed by the name of the speaking Character (in realistic, non-stylized performing, this itemization has to be broken and natural speech overlapping reconstituted by the Actors through rehearsals). Stage directions are printed so as to be easily distinguished from spoken text.

Script
A Script is a working tool, typed or computer-printed and distributed to all the professionals involved in a production. It is written by a Director or a Dramatist or both. As a result of the dramatic analysis (see   "Text stage") at the end of the research the Script comes out as an adapted version of the Play (if an adaptation is needed). It may be shortened and some Characters may be eliminated, for dramatic, length or budget reasons. Scenes may be moved onward or backward and the whole structure of the Play may be manipulated according to the Director's ideas. Scenes are numbered and may be grouped in numbered *Blocks* having a specific theme or may be subdivided in smaller action units. All along the dramatic research an amount of notes and sketches are produced.

Dramatic Notebook
At this stage of the work, notes don't pertain to staging ideas but to the preliminary discovery and understanding of the Play inner Structures that will command later the

Dress-cutting sketches
They are technical sketches showing in detailed form the cutting technique for every costume, according to epoch dress-cutting techniques

Fabrics samples
Fabric consistency and surface, and not only colours, are most important in Costumes to get expressive impact, epoch style, social characterization and light reflection. For this reason an accurate research on fabrics has to be made by the Costumes designer and Dressmakers Head to be then checked with the Director. Chosen fabric samples are joined to the drawings or pinned upon them.

Musical Scores
The Composer works on them and in their definitive form they are the result of the collaboration between the Composer and the Director, to be given to the Orchestra for rehearsing and recording or playing live in the Performance.

Musical recordings
A Composer may record with the Sound Technician musical ideas and tests for the Director to listen: (Final recordings are made later to be played in the performance, if there is no live Orchestra).

Live music auditions
But the best and most usual way to collaborate is when (as for any other Teatre activity) the Composer and the Director sit at the piano, talk about the performance, try out musical ideas and test their development.

Lighting plan
There is no way to understand and verify if a Lighting plan on paper, with sketches, symbols and numbers indicating spotlights positions, direction and intensity, will get the required effects. This is possible only with live tests (or simulation). So we should rather speak of Lighting notes, where the Light designer slowly records his hypothetical lighting ideas while following the work of Director and Set Designer on the staging project definition (see   Lighting style)

Actors files
Every Theatre has a collection of Actors files, with photos and curricula. When extra Actors are needed in addition to those usually employed, files are consulted.

Live auditions
In addition to files consulting an announcement may be made for Actors to present themselves to an audition with a Scene or a monologue or a song. Their performances are examined by the Director, his Assistants, the Choreographer, the Composer (if singing is required). If the Theatre has a School attached, its teachers are also present.

Inventories
It is the task of the Production Manager to collect very detailed inventories from each work section. In them are classified objects to be made, operations to do, working days, materials and equipment to purchase, objects and equipment to rent, etc.

Budget chart
On the basis of the inventories, the non-resident contracts and other general items, a Budget chart is prepared, in which, as in every budget, approved expenses and foreseen incomes are confronted and balanced.

Production Timetables
The General Production Timetable is a large chequered table hanging in the Production office. On the horizontal axis the days are marked and on the vertical axis all the production operations, so as to check in one look their whole pattern , their timing and their effective execution. It is daily adjourned by the Production staff and from it can be derived the daily schedules. A first version concerns Production Phase (Rehearsals and Constructions) a second one Post-production Phase (Home Performances and Tour Performances.
The Rehearsals Table hangs in the Director's room, with the days on the horizontal axis and the numbers of each scene on the vertical one. The Assistants mark on it day by day with an X on the intersections the scenes effectively rehearsed, so as to check in one look how much each scene has been rehearsed and which scenes need more rehearsing.
The Performance Table has on its horizontal axis the scenes' numbers and on the vertical one the names of each character with his interpreting actor. An X marks on the intersection the presence of an actor in a scene. It is a sort of map of the performance, specially useful for performances with a large cast and many entrances and exits, so that each actor could calculate in one look where his entrances are and how much time he has between an exit and next entrance, for instance for costume changing purposes. This table hangs in the Dressing Rooms and is also printed and distributed to the Actors It is made by the Assistants or the Director himself (as a tool helping to grasp and memorise a Performance architecture).

Company daily schedule
This is the official daily schedule which is hanged every day of the year at Stage entrance (even if only to announce "Rest"), is distributed to all the offices and is kept in the Production Office. In one section it announces whatever the Company will do the morrow on the Stage or elsewhere, as rehearsals, set assembling, technical operations, recordings, etc. In a second section is announced the performance that will take place in the evening. Assistants and Stage Manager have the task of redacting and hanging it and the Director signs it

Technical daily schedules
These are the daily duty orders for technical operations. They are redacted by the Production Manager, hanged at Stage entrance and distributed to each team

Tour Performances daily schedules
A variation of previous schedules.

7. ABOUT TERMINOLOGY

There are multi-language dictionaries which contain all the terms regarding theatre. Graells suggests this book: Theatre Words, ISBN 91-85472-25-5. It is on sale at Millà bookstore in Barcellona. It contains a list of terms and their translation in Spanish, France, Italian, English, and German language. It does not contain a description of the means of the theatre terms.
  There is a standard international terminology and symbols for lighting techniques. It is called USITT and it is under development. Francisco Rodellas is in touch with the people of the official committee.

8. ABOUT CATS BENEFITS AND ADVANTAGES

8.1 On learning time

CATS users can attend an introduction course whose duration is less then two days. It is useful to understand together with an expertise, the main functionalities of CATS and to have the basic information about CATS installation and managing. Then CATS must allow an autowidening through its use and the personal and/or grouped testing, through on line examples and an easy-to-use and intuitive user interface.

The terminology used in CATS must match the one it is used by professionals. The language used for commands and menu items in the interface must be Catalan or Spanish, but it should be useful to localize it to at least all the European languages which have a great distribution (French, English and German language).

8.2 On time and money saving

When the set designer prepare a sketch that represent the scene area, if the director decides any modification he must prepare a new sketch and this operation lasts at least one day. CATS must allow the director to make quick modifications.

The director assistant spends a lot of time to update the direction descriptions at the end of a day or a week of rehearsals. CATS is useful to automatically change the direction notes.

At the moment some choices are based on the intuitiveness and the rehearsals are made just at the last time. For examples a musical piece is played on the real scene, but the musician must modify the piece many times before the director is fully satisfied. CATS allows the musician and the director to work together and to simulate at least the duration effects of musical pieces so reducing the rehearsals number.

Rehearsals last an average of 7/9 weeks. During the last two weeks the acting rehearsals are made, but too time is spent for the rehearsals for coordinating all the spectacles elements: light can be verified only on the real scene and when the actors dresses the real scene costumes because the colour effects are different. In this phase there are technical performances during which the synchronisation among actors is important other than the actors interpretation. CATS allows the simulation of the synchronisation among actors and moving objects on the scene.

At the last moment all scene changes are verified. This phase wastes a lot of time, but it could be prepared in advance with CATS.

8.3 On other advantages

CATS can bring to artistic advantages other than economic ones. CATS allow the testing of many ideas before the rehearsals. So the director can make his choices with more sureness because these are not based only on his fantasy or intuitiveness, but he has already a concrete ideas of their result.

CATS is peculiarly useful in the production of complex spectacles, other than simple ones; in facts when a spectacle is complex it is difficult to test all the elements together and something is verified only during the final rehearsals. Instead the computer allows a simulation in advance.

CATS is not useful in the creative phase of a production, but when a text is chosen it is very useful.

For example the street theatre, which doesn't have a precise text but is based on actors improvisation, doesn't need CATS. However street theatre moves from a town to another and it must modify the main events of its spectacles to match the new town topography.

A CATS version which allows events planning should be very useful for street theatre.

8.4 On limitations to user activity

Generally one can think that a computer application bounds the creativity of the artists. Some years ago this charge was made also to word processors, but within few years many writers left their typewriters and now they use word processors.

CATS

Computer Aided Theatrical Score

Requirement Collection for
TV and Cinema Producers

Table of Contents

1. Introduction

This document is based on information provided by CATS users who are professionals working in TV/Cinema production. These categories of users are well represented in the CATS consortium by:

Le Jour/La Nuit
Reims, France
   Annie-Madeleine Gonzalez   Film Director

Other groups of users, outside the CATS consortium, have expressed their deep interest in CATS objectives and have supplied some useful additional information which has been used to complete the requirement description.

RAI
Rome, Italy
   Massimo Morelli   TV Director

Canal +
Paris, France
   Thierry Matalou   Light Manager
   Jean-Michel Baëza   Film Director
   Michel Dupuis   First Assistant

France 2
Paris, France
   Daniel Pate   General Secretary

Interferenze
Pisa, Italy
   Andrea Soldani   TV/Cinema Director

2 Applicable and reference documents

2.1 Applicable documents

- RAI interview CNUCE Requirements
- Interferenze interview CNUCE Requirements

2.2 Reference documents

In the TV/Cinema field, there exists :
- Dictionnaire Européen des Techniques : Lexique multilingue, Français, Anglais, Allemand, Espagnol, Italien. Edition Foucher.

- Dictionnaire de l'angalis des medias et multimédia. Edition pocket.
- Ralph S. Singleton: Filmamaker's Dictionary, Lone Eagle Publishing Company, 1990, 9903 Santa Monica Boulevard, Beverly Hills, CA 90212
- Galazzo, Oggero, Santero: Dizionario Inglese Italiano della comunicazione auidiovisiva , RAI Radiovisiva Italiana 1994.

3. Spectacular enterprises

This section introduces the main enterprises which have been interviewed in TV and Cinema fields and put in evidence their roles in the spectacular area as producers of performances of various kinds.

3.1 Le Jour/La Nuit

It is an independent new company which produces Cinema/TV movies and documentaries. During the phases of pre-Production, Production and post-production, the company is organized in two departments which employee several technicians (from 2 to 20, according to the projects): on the one hand, the Communications Department produces movies and videotapes for industries, public institutions, developing concepts for external or internal communications (recent works have been done, for example, for the private and public companies such as Credit Cetelem, BP Chemicals, La Poste, Conseil Régional Nord/Pas de Calais, Musée des Beaux Arts de Lille); and on the other hand, the Films Department produces a lot of short movies (fiction) such as documentaries in coproduction with Arte and with Le Centre Georges Pompidou and a few long features.

The language used in the productions is French.

The various kinds of productions realised by the Le Jour/La Nuit is described in this table.

Kinds of Production	quantitative (in an year)
Film	1,5
Documentary	1

The Film Production includes short and long features as well as documentaries.

3.1 RAI

RAI is a public company in show business, leader in Italy. In some way RAI rapresent a benchmark, a model, for other public utility of other countries. RAI have a well-established economic situation, and have the major quote of audience in respect of other European company, with a programmation charaterised by information and culture (with BBC also). Furthermore, RAI is

strongly oriented to new technologies (satellite, Digital TV), and new challenge of the next years (broadcast with all the eart for Giublieo of year 2000).

Some statistic information:

- Total income: 34 Mecu (1995) in respect of 9,5 Mecu (1994).
- Ledearship in audience: 49% in the prime time and 48% for all day share.
- growth of publicity income: (+5%) from 1994 to 1995, from 632 to 666.5 Mecu
- Staff: 11.000 Units in 1995

Is diffcult to establish the percentage of trasmission for every kind of program. We can briefly say that RAI have:

- 60% sport, educational, information
- 40% show

30% of the share is due to information programs.

4. Working phases

The process of producing a performance includes these main phases :

Phase	Le Jour/La Nuit	RAI
Pre-production	6/18 months	6/18 months
Production	6/10 weeks	1/12 months
Post-production	2/6 months	2/6 months
Distribution	6/12 months later	
Exhibition/Exploitation	2/3 months	variabile
		variabile

Pre-production

In the movie industry it can last from 6 to 18 months. It start after the choice of the script and the contract between director and producer. It includes the research of funds (6-18 months) and the preparation of the Production (2 months)

Production

In TV/Cinema the Production phase is when the real shooting is made.

Post-Production

In the movie industry only, it includes all the activities which are required to prepare the final product to sell (editing, mixing, processing laboratories, all the phases to get in order to exploit the standard copy)

Distribution

For the movie industry only. It is when the producer had contracted an arrangement with a distribution company (before or

after the Production) which is in charge of the exploitation on screens, and/or TV, and/or videotapes.

Exhibition/Exploitation

In Movie, the exploitation is when the movie is on screening, (or in case of short movies- because the commercial exploitation for such a product is very bare- shown in festivals) or when it is broadcasted on TV (in case of coproduction with TV or sale after the Production)

5. Professional categories

Accountant

The accountant, like in every commercial company is an employee responsible of the counts

Cameraman and Assistant(s)

During the preparation phase, the assistants test cameras, lenses and the negative film. During the shooting, the cameraman shoots, according to the director's instructions about the frame and the movements. In movie the director can control with a video monitoring control.

The 1rst assistant manage the focus, the second assistant gets in charge of the reels, and the lenses.

Clapper boy

He takes the clapper board with slates on which are written the film title, the shot number, and the take number. He claps to inform of the beginning of the shooting. Very often one of the machinist does it.

Costume Designer

He is in charge to find or to make the actors' costumes.

Director

She/He manages the aesthetic aspects of the play. He conceives a project of movie and he explains his idea to actors and technicians and directs them. She/he is responsible of the movie. In Europe She/He is very often the author of the script (at least one of them). In the field of independent Production she/he is the initiator of the project. It is a very important difference with the situation in USA. (the concept of_author is not the same)

Director Assistants

He/she is (are) the link between the director and every technical manager. She/he coordinates all the activities and controls the works of the rest of professionals.

In a traditional crew the hierarchy is:

Effects man

The Effects man makes the special effects in the visual or sound domain, such as explosions, car crash, murders ... during shooting, and afterwards in the post-production phase (Laboratory effects).

Hairstylist

He/she makes head-dress of actors, announcers or guests, and he/she creates falsest and wigs.

Lighting operator (studio electrician, lighting man, gaffer)

He has in charge to supply the convenient light according to the instructions of the Director of photography. His assistant is the first electrician, or best boy.

Local Managers

The sound manager, the light manager, the photo manager, and in the central control room in TV domain, the sound engineer, the image engineer, the video tape recorder operator, the script-girl who records the time-codings for editing, work in a tight cooperative way during the shooting in order to supply the best rendering at sound, speech and image levels. For TV, the engineers in the control room take the final decision about the technical quality of the shooting.

Location Manager (régisseur)

In the anglosaxon way of shooting there is no equivalent term to "regisseur" because the tasks and responsibilities are shared between two types of professionals : Assistant Production manager and location manager. The manager who has the responsibility of the organisation for the shooting on location. She/he asks for the shooting licenses in public or private location, he has in charge all material needs during the shooting, the transport of material and people etc... He works closely with the Production director, the art director and the property man.

machinist, gripman

He manually handles the machines, machine levers, or controls on a board the working of machines.

Make-up Artist

He/she makes make-up of actors, announcers or guests, and he/she creates falses.

Musician

He works with the director to compose a musical piece or to choose an existing tune that it can modify if necessary according the film, play or broadcast project.

Perchman/Boom operator /boom man

Equipped with the microphone boom, he catches speech.

Producer

There is two kind of producer:

Independent Producer

He has to fit the budget with the shooting needs, to manage with the unforeseen costs, to negotiate with the suppliers, to negotiate with the crew, to pay weekly the crew. He/she chooses to make a movie He has to finance the whole or a part of a production has to understand the Director's idea, to appraise the feasibility of the movie project and all the technical requirements, to estimate the costs, to translate the script at the cost and time levels.

Company's Producer

in TV or majors, he has to choose and manage a project according the financial and artistic politics of the company. (TF1 or Arte productions are very different...)

We can notice 4 mains types of producers, (a same producer can take up different duties):

Producer

She/he is the initiator of the project.

Producteur délégué

Lline producer: By a contract (a delegation) with all the coproducers he has to assume the responsibility of the movie. 2 main characteristics : She/ he is the warrant of each contract.- She/he collects the budget and shares out the incomings.

Executive producer

She/he is in charge of all the organisation of the movie

Associate producer

She/he finances a part of the movie.

Producer Administrator

He manages all the financial and administrative aspects of the film. He/she is the specific accountant of the movie, he works closely with the director of the Production to understand all the costs, to adjust the previous budget with the actual expenses, he is in charge of each financial movement.

Property man

He/she has in charge to find all the pieces of the set for the film, or specific object in relation with special effects.

Script-Girl

During the preparation phase, she has in charge to appraise the timing of the movie according to the script. During shooting, she has to write several documents such as the continuity document, which

Film tests

The first assistant cameraman tests the effects of some technical film characteristics (kind of film, lights, actors, set, special effects) in relation with the Laboratory which has in charge the film processing.

Filmscript, Shooting script, script, breakdown

It is a scenario translated in several phases each phase representing a shot unit. Usually there are 2 columns in the document, with on the right the text said by the actor, and on the left column, the technical comments and symbolic notations.

In detail, the right side contains :

- the text said by the actor. Numeric notations corresponding to the number of the shot, thoroughly put in connection the text and the shot number. Symbolic notations links also the text to other technical components (lights, music ...). All these informations and the actor text are included in the right column.

On the left side, there are :

- notations for cameras shots: close-up, detail close-up, travelling; precising also the number of focuses, etc ... The sequence is cut out in accordance with the story actions which induce a different shot. So every shot changing is clearly mentioned (for instance bold underlined characters), and just below the corresponding comments on actor action in standard notations.

- Besides the actor actions are commented in accordance with the cameras needs.

- The filmscript also precises the direction of cameras shot with symbolic notations (such as angles), towards actors or set details, which are relevant for the scenario, and both roughly drawn.

- The filmscript aim is to synchronise all the story events with all the technical events.

- This document is text oriented and it is made by the Director.

Image report Shooting (or image) report

During the shooting, the script-girl writes a report which precises the exact time of beginning / end of each shot. Three samples of this report are given to the Director, the editing laboratory and the image laboratory. The reports are sent the laboratories together with the pictures

It is the same document as the sound reports, but image oriented. It is done to identify and to know what is done with each reel of negative

Inventory

The second assistant has in charge to achieve the lists presented by domain : roles, set, properties, costumes, vehicles, special

effects, special needs ... This document is completed by the different local managers

Light report

The document contains two kinds of information : the implantation schemes and lists of equipment. It is made by the Director of photography.

Model

Before finding the elements of the set, the set designer may present a model of it to submit to the director.

Patterns

For costumes, the costumes designer may present samples to submit to the director.

Photos

They are used for the choice of costumes, set, properties, the places to shoot . They are made by each local Manager. The photos for the places to shoot are made by the Assistant Director.

Personal script

During the shooting, the script-girl put notations on the filmscript. She precises all the modifications in the text, she notes the sequence and shot number in relation with the text of the actors, the position of the actors, particular details of the costumes (for the continuity), the different shot (close shot ...) and the movement and the direction of the camera(s); this description concerns a technical note :The second document is a technical work document presenting:

- a rough drawing of the set with the names of important objects of the set
- with the implantation of the spotlights (with their power), their direction (with an arrow)
- and the cameras, their movings (travelling or angles of shooting).
- Some comments give more precision to the drawings.

Pilot

A pilot is the first part of a serial, or sitcom, or show, made in real condition, (so it is a finished product, like N°zero for a newspaper) to convince producers, TV or every financial partners to finance the whole project. Also it can be a test for the audience.

Planning

A general planning precises all the places which concern the staff for the need of shooting or for the external life (restaurant, hotel), all the actions to be done with their places, the trips to be done for the shooting, the arrival/departure of the staff, joint with a timetable. The assistant Director makes it.

Work planning

The Assistant Director makes the planning. It is a very precise grid containing in the horizontal axis, the days of shooting with the dates. Each column contains 1° all the sequences shot in the morning and in the afternoon, 2° the overall work timing, 3° the first hour of shooting, 4° the location where the film is shot.

On the vertical axis, there are the names of the actors with their corresponding role by importance order in the film, the number of shooting days they make, and a numeration of the different roles.

The grid is filled by the indication of the presence of the actor (symbolized as A) or the extra (symbolised by the capital letters of the role), and his/her corresponding numeration : for instance A5 means that the fifth actor whose name is Pierre Dupont, who plays the father, is working on Sunday 3rd July on the roof of the cathedral from 9 a.m. to 23 p.m. ...

If the extras are several, the number of persons is written before the capital letter corresponding to their global role (10 S means for instance 10 students).

In the left corner of the page, there are information about the film title, the main film managers, phone numbers.

7. About computer

For the needs of writing documents, the Production society Le Jour La nuit uses 2 Macintosh. So the producer wishes to go on using these computers. But by the way these computers are not powerful enough for the CATS implementation. So if the public market prescribes, as it seems to be the case, to choose another system, the question is settled.

Area	Computer	Hardware	Software
producer and administrator			Excell
director, editor and dubbing mixer			Scan2
everybody			Word

RAI use some connected PC 386 for administration field. RAI considaration abouts CATS are:

- More powerful computer for an production oriented environment for the use of CATS
- A large screen view for multi-window interface.
- Terminology of command interface equal to dispositive (camera, mixer, ecc..) command terminolgy.

8. Pre-production activities

Preparation

This work is developed by these people : the Director, the Producer, the Director of Production, the Local Managers, the Assistants. It includes several activities which are described below.

Explanation of the project

The Director explains his/her project to the technicians : he describes the frame, the light, the color, the sound, the mood he is imagining, the rhythm (long shoot, sequence with a lot of cuts...). The technicians try to translate this vision into technical and artistic points of view.

Preparation of the shooting

The Director, his First Assistant or the Location Manager is researching locations to shoot and he/she takes photos. The Assistant Director prepares the planning.

Every technician prepares his/her task : research of set and pieces of set, costumes to be found or to make ... The cameramen and their assistants test cameras and the negative film.

Filmscript

The filmscript corresponds to the way of shooting the scenario. So it is written using a cinematographic language. The filmscript is made by the Director.

Camera and Light script

The Director of photography makes this technical script.

Script reading/Analysis of the characters

Generally it is the first meeting with the actors. Every one reads his/her part, comments, asks questions etc....

If the Director prefers to work in this way, he explains to actors what are the characters they play. In a movie, there is no time for rehearsals before shooting.

9. Production activities

There are one or several rehearsal(s) before each shot in order :
- to find and set the actors and camera motions
- to find a better way of saying or a better intonation to the speech, the better way to act.
- to set up the light, and the sound
- to improve the play at the shooting level

- to put in place and set the next shot.

Continuity and others documents

Every day the script-girl makes reports at the artistic, technical and administrative levels on all what was done on the stage during the day :

- the "sneak" note reports on all what was done during shooting on the stage or outwards with a strict timing,
- the personal script is the script which is completed with all the detailed precisions on the speech modifications, the exact positions of actors, the position of objects in a furniture, the way of wearing a piece of costume ... It is the actual script,
- the continuity is a document which is written following the story timing and not the shooting timing. Its main aim is to keep coherent with the film story (for instance to keep the same place in the room for the actress, the same costume accessory ...).
- the shooting (or image) report precises for the editing laboratory and the image laboratory, the exact time of beggining / end of each shot.
- the production report written after the shooting phase, where are summarized the main informations about shooting.

Duty Chart

Every day all the professionals concerned by the shooting are given a form which summarizes for the following day the useful informations : who does what, when, for what, which shot / take, which material, where to eat ... It is a precise timetable for every professional (actors, technicians ...) with a thorough precision of the material required.

Technical note

Specific notes about technical concerns, written by the technical managers, report on the required equipment for the following day, the operations to be done before shooting, the number of takes and shots, the places.

Technical planning

This document is focusing on timetable of each technical staff with the precise place where the shooting occurs.

Work planning

It is a precise timetable which informs on the work timing of each actor or extra. A grid precises per hour the presence of actors with eventually different roles, the shot and take where he/she works, the places of shooting.

- to handle intensity
- to cut/add musical chunks
- to fade.

11.7 Sound and special effects

For the Sound and special effects, it is necessary :
- to record sounds
- to achieve a sounds BD
- to have the means of combine
  - sounds
  - sounds / voice
- to modify
  - the sound intensity
  - acoustic prperties

It must be possible to import sound and acoustic effects from pre-existing data bases, build them with other programs or import sounds created lively by a technician. Sounds include a variety of cases from steps of a person on the above floor to a thunder.

11.8 Movable Objects

For movable objects other than actors, it is necessary :
- to have at user's disposition functions such as to move object, to change their direction and their size, to combine actions of several object (carcrash, grips ...)
- to change the camera axes
- to modify the direction, color, intensity of the light.

11.9 Cost and Resources

In this domain there exists a very complete tool (Movie system) which takes into account the TV/Cinema budget in all its extension, for equipment and persons, according the laws of different countries. According to TV/Cinema professionals who are using it, it is very complete, and some of them think it is a marvellous tool. As it would be probably impossible to do better than Movie System with CATS (this system was developed since 7 years), the question arises to know what is the best solution with Cost and resources domain, and if the best is not simply to make CATS compatible with Movie System ... As this system, developed since several years at least in France, begins to be well known in this field, Movie system and CATS could each other benefit of their mutual distribution.

For the Cost and resources planning module,
- an interactive account plan is considered as necessary,

- and also a thorough inventory of all the properties, set, technical equipment (image, light, sound, machinery), objects, actors works, with   their cost.

11.10 Organization

Organisation deals with planning productions phases, space assignment for various activities, programming tournée, etc. At present the Director of Production uses Filemaker to handle these aspects.

The system might have an Agenda to coordinate the activities. In the Agenda, it would be specified the tasks to do in the first week, the second week etc. and the status of the activities.

Some users think that CATS could be very useful for strictly timing the film or the broadcast, because mistakes have important consequences on costs.

Besides this function, it is suggested that the overall timing of a shot (for instance 3 mn) determine as a consequence the timing of each action in the shot (for instance the character motion etc ...)

- synchronization between all the events (image, speech, light, sound, machinery ...) for each shoot
- supplying a list of needs by domain :
  - actors
  - roles
  - extras
  - objects
  - set
  - equipment
  - properties
  - technical properties (image, light, sound, machinery ...),
  - in order to precise film requirements.

11.11 Technical Planning

This means planning the work in the workshops (times, rehearsals and their compatibility with other activities). At present this work is handmade by the responsible of workshops.

Concerning the "Technical Planning" module, the functions are :

1. to supply an electronic version of the filmscript

- first this document is written with a standard word processing, but furthermore it could be enriched with extra functions such as :
  - to partition the page space for
    - ◊ actor text
    - ◊ technical comments
      gestures
      behaviors
      motions

the virtual stage, she needs an hypertext which is not only an electronic filmscript, but also a synchronisation tool between all the events (story and technical).

Script girl. To precise the movie timing and to write a continuity, as the first assistant, she needs an hypertext document.

Set designer. He only needs a virtual stage visualisation. All the technicians (lights, sounds, images). idem

Producer. He/she is mainly interested in technical perspective and costs. So he needs as everybody involved in the film production, to understand at the best the director's project (therefore he needs a virtual stage representation), and he needs a tool which could make a link between each hypothesis of scenario and the corresponding costs.

Accountant. Furthermore than the costs appraisal, he needs a complete tool in the financial domain including staff wages, and open enough to take into account many works paid by hour or per contract.

From tasks points of view

Direction. The functionalities of the CATS project are :
- to supply visual scenes with set, costumes actors, gestures, movings, light effects
- to collect and put together all the data -> several DB
- to visualize
  - to get each shot in a concrete form
  - to get each sequence project
  - the whole movie project
- to assess several versions of a sequence project
- to memorize them
- to record, to integrate and to handle sounds and speech (cutting sentences, sounds, silence, and conversely adding them)
- to record the definitive version of the film project

Production. For this phase of the film project, the aim is to compute the financials costs and the budget according to different solutions (modifying the numbers of actors, the hours of shooting, the set, the equipment ...).

Memory

TV/cinema users suggest to dispose of a window for documentation in order to note links to another document (same piece of set , costume in a previous film etc ...).

Open tool

The CATS system has to be conceived as an open tool capable of import / export the most common formats that can be useful for the different functionalities. So CATS should no have a 3D modeller but should have the capability of importing objects from one of various 3D modellers. CATS should be able to import/export DXF format,