**Appendix A: Project Plan Template**

*Note: Text displayed in blue italics is included to provide guidance to the author and should be deleted or hidden before publishing the document.*

*This template can be used at it is, or to complete and improve an already existing template.*

Project Plan

for

Musical Neural Network

**Distribution:**

<Organization., Name>

**Appendices:**

<Appendix 1>

*Help: The purpose of the Project Plan is to document all managerial aspects of a project that are required to execute it successfully within its constraints. If some aspects are defined in separate plans (e.g. Quality Assurance Plan, Configuration Management Plan, Risk Management Plan, Project Schedule), the Project Plan should refer to these documents.*

*It is important, that also non-applicability of a section is agreed on by the responsible manager. Therefore:*

*Don’t remove headlines level 1 and level 2 headlines (Heading1 and Heading2)*

*Reasons why a section is not applicable shall be documented under the respective headline*

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1. **OVERVIEW**

Using a neural network we can train a neural network to recognize/analyze sheet music – Looking at the types of notes used in what way and the pauses between notes. We will be using Tensorflow on the Anaconda IDE to develop our system. The neuralnet can then generate its own unique music. Will it be capable of producing music indistinguishable from a human composer?

*Help: This section describes a management summary. Provide essential information like*

*What the motivation for this project is (e.g. to fill a gap in the product portfolio)*

*Who the customer is*

*What the project will deliver. Is it a new product or an extension of an existing one?*

*What it will cost*

*How long it will take*

*Which organizations are involved*

1. **GOALS AND SCOPE**
   1. **Project Goals**

*Help: The project goals define the expected project results together with the required development constraints.*

*Identify the various categories of project goals Consider the following categories:*

*Functional goals*

*Strategic goals*

*Business goals (e.g.: time-to-market, cost)*

*Technological goals*

*Quality goals*

*Organizational goals (e.g. competence development, testing of new methods, techniques, or tools, application of new processes, etc.)*

*Other goals, e.g.: usability, portability, etc. (these goals, and what is specifically expected, should be clearly specified in the Project Requirements Specification)*

*Constraints (e.g.: environmental constraints, application specific standards, national standards, cultural relationships, etc.)*

*\*\*\*\* You may infer sensible Project Goals\*\*\*\*\*\*\*\*\*\**

*Prioritize the project goals: Functional, business, and quality goals should be prioritized at least.*

|  |  |  |
| --- | --- | --- |
| **Project Goal** | **Priority** | **Comment/Description/Reference** |
| **Functional Goals:** | 2 |  |
| <functional goal #1> |  |  |
| <functional goal #2> |  |  |
|  |  |  |
| **Business Goals:** |  |  |
| <Time-to-market> |  |  |
| <efficiency, cost, quality> |  |  |
| **Technological Goals:** |  |  |
| <technical goal #1> |  |  |
|  |  |  |
| **Quality Goals:** | 2 |  |
| <quality goal #1> |  |  |
|  |  |  |
| **Constraints:** |  |  |
| <environmental> |  |  |
| <appl. specific standards> |  |  |
| <national standards> |  |  |
|  |  |  |

* 1. **Project Scope**

*Help: Clarify what the project will (and will not) deliver, in order to avoid future shifts in the level of ambition.*

* + 1. **Included**
    2. **Excluded**

*Help: State what is specifically excluded from the project but what the customer may expect to be included. This could, for example, be clarifying that training of end-users is excluded.*

1. **ORGANIZATION**

*Help: Describe the internal project organization and all organizational issues affected by the project result or the project is dependent on.*

* 1. **Organizational Boundaries and Interfaces**

*Help: Describe the environment that the project is embedded in. Identify external* ***stakeholders*** *the project is dependent on and who are affected by the project result.*

* 1. **Project Organization**

*Help: Identify and staff all steering functions, project management functions, and execution functions.*

*Graphical illustrations such as hierarchical organization charts or matrix diagrams may be used to depict the lines of authority, responsibility, and communication within the project.*

* + 1. **Project Manager**

*Help: Identify the Project Manager who has the overall responsibility of the project. If the Project Manager has appointed a Technical Project Manager (syn.: Development Project Manager), who is only responsible for the technical project execution, this should also be specified.*

***Example:***

|  |  |
| --- | --- |
| **Role** | **Organization: Name** |
| Project Manager |  |
| Technical Project Mgr. |  |

* + 1. **Project-internal Functions**

*Help: Since the project manager has the overall project responsibility, he /she is also responsible for the project-internal functions. But he/she can delegate the management of these functions to project team members. In this case list the functions and individuals responsible for*

***Example:***

|  |  |  |
| --- | --- | --- |
| **Function** | **Organization: Name** | **Comment** |
| Quality Assurance |  |  |
| System Test Lead |  |  |
| Validation Lead |  |  |
| Configuration Mgmt |  |  |
| Change Mgmt |  |  |
| etc. |  |  |
|  |  |  |
|  |  |  |

* + 1. **Project Team**

*Help: List all project team members here and ensure that the time they spend on the project is accounted for in the project budget.*

|  |  |  |
| --- | --- | --- |
| **Organization: Name** | **Availability** | **Comment** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

* + 1. **Steering Committee**

*Help: Identify the committed individuals composing the project steering committee, and its responsibility and authority within the project.*

|  |  |  |
| --- | --- | --- |
| **Organization** | **Name** | **Comment** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. **SCHEDULE AND BUDGET**
   1. **Schedule and Milestones**

*Help: Estimate the effort for the project activities and plan the activity sequencing. Then prepare the schedule that supports all of the required activities and complies with the resource plan.*

*Define project milestones based on the chosen development strategy (see section 6) and on critical events in the project schedule.*

*List the milestones and define clear milestone criteria to make milestones measurable. Examples are given in the table below. Replace the demo data with your project milestones.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Milestones** | | **Description** | **Milestone Criteria** | **Planned Date** |
| M0 |  | Start Project | Budget Release | <yyyy-mm-dd> |
|  |  | e.g.: Project goals and scope defined | PRS or SRS reviewed  Stakeholders identified Impl. Proposal reviewed | <yyyy-mm-dd> |
| M1 |  | Start Planning |  | <yyyy-mm-dd> |
|  |  | <milestone description,  e.g. Life Cycle Objectives LCO defined> | Scope and concept described | <yyyy-mm-dd> |
| M2 |  | Start Execution |  | <yyyy-mm-dd> |
|  |  | <milestone description,  e.g. Life Cycle Architecture LCA defined> | Requirements agreed, project plan reviewed, resources committed | <yyyy-mm-dd> |
| M3 |  | Confirm Execution |  | <yyyy-mm-dd> |
|  |  | <milestone description,  e.g. alpa version> | Architecture reviewed and stable | <yyyy-mm-dd> |
| M4 |  | Start Introduction |  | <yyyy-mm-dd> |
|  |  | <milestone description,  e.g. system test passed> | Coding of new functionality finished,  Draft documentation | <yyyy-mm-dd> |
| M5 |  | Release Product |  | <yyyy-mm-dd> |
|  |  | <milestone description> | Product system tested, documentation reviewed | <yyyy-mm-dd> |
| M6 |  | Close Project |  | <yyyy-mm-dd> |

A detailed Project Schedule is available in **Error! Reference source not found.**. The Project Schedule is monthly updated by the Project Manager.

* 1. **Budget**

*Help: Calculate the required project budget based on cost estimates for project activities, sub-contracts etc. Present the distribution of the budget over the whole project life.*

* 1. **Development Process**

*Help: If available and applicable refer to the* ***organizational development process*** *and describe deviations from this standard process. Otherwise describe the development process applied in this project.*

*Explain why this development process has been selected. Describe how the selected development process is tailored to the needs of the project, takes learnings from previous projects into account, and how it is mapped to the milestone process.*

1. **RISK MANAGEMENT**

*Help: Describe the procedure to be used for managing risks in the project. The procedure should specify who is responsible for risk management, when risk situation is regularly considered (e.g. at each project status meeting), and which roles risks are communicated to, etc.*

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1. **SUB-CONTRACT MANAGEMENT**

*Help: List which part of work is out-sourced to which sub-contractor.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Sub-contractor** | | **Sub-contracted Work** | **Ref. to sub-contract** |
| **Company** | **Contact** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. **COMMUNICATION AND REPORTING**

*Help: State the principles for reporting and distributing information within the project for the different groups of internal and external stakeholders. Include, for example, how often the reporting will take place, the type of reports or information, the type of media in which it is presented, and the type of meetings that will take place.*

1. *Internal communication and reporting: ensure that all information is available to those who need it.  
   – Plan project meetings, how often they take place, and who will participate  
   – Define how project information will made available to the internal stakeholders (e.g. project library)  
   – Define how and how often sub-projects and sub-contractors report to the project manager  
   – Define who participates milestone meetings  
   – Define how events will be communicated*
2. *External communication and reporting:  
   – Define what information will be provided to which stakeholders  
   – Define how and how often information will be provided to which stakeholders often (e.g. project report)   
   – Plan regular meetings with external stakeholders*

***Example****:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of Communication** | **Method / Tool** | **Frequency/Schedule** | **Information** | **Participants / Responsibles** |
| **Internal Communication:** | | | | |
| Project Meetings | Teleconference | Weekly and on event | Project status, problems, risks, changed requirements | Project Mgr Project Team |
| Sharing of project data | Shared Project Server | When available | All project documentation and reports | Project Mgr(s)  Project Team Members |
|  |  |  |  |  |
| Milestone Meetings | Teleconference | Before milestones | Project status (progess) | Project Mgr Sub-project Mgr |
| Final Project Meeting | Teleconference | M6 | Wrap-up  Experiences | Project Mgr Project Team |
| **External Communication and Reporting:** | | | | |
| Project Report | Excel sheet | Monthly | Project status - progress - forecast - risks | Project Manager Sub-Project Managers |
| SteCo Meetings | Teleconference | Monthly |  | Project Manager, SteCo |
|  |  |  |  |  |

1. **DELIVERY PLAN**
   1. **Deliverables and Receivers**

*Help: List here all deliverables from the project and who the receivers of the deliverables are. Indicate also the planned delivery date. Take in consideration both strategic and technical aspects.*

***Examples*** *for non-technical deliverables are: marketing and sales material, training material, management presentations, publications, bullets, etc.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Ident.** | **Deliverable** | **Planned Date** | **Receiver** |
| D1 |  |  |  |
| D2 |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. **QUALITY ASSURANCE**

This refers to the maintenance of a desired level of quality in a service or product, especially by means of attention to every stage of the process of delivery or production.

Software quality is regarded as the highly important factors for assembling the global competitive position of any software product. For quality prediction a neural networks are used for better prediction accuracy. The application software is first subjected to the test case generation and once they are generated they are applied to advance neural network for prediction quality.

The neural network is improved and then optimizes the weight factor for improving the prediction. The quality metrics like maintainability and reliability are estimated for predicting the software quality and the results are compared with other existing techniques to verify the effectiveness of the proposed method.

**CONFIGURATION AND CHANGE MANAGEMENT**

Configuration management systems and change management systems are used to manage any sudden changes in a project or system. Some changes may affect the project baselines, such as scope, the time and the cost. Some changes that might be required may be that of the product itself, like the specifications.

**Changes**

* Client needs

This is one of the factors that influence us to make changes in the system because if the client is not very happy with the system then some changes will have to be made. That is why it is important for us to consult the client during each and every phase so that they check if they still satisfied or not.

* Project Schedule

This is a very important factor since the project will have to be completed in time, regardless of whether the time has been cut short or extended.

**Configuration management**

* Adding a feature to the system

This is with regards to any functionality of the system that might need to be changed or add a new one. This will require new configuration, for example if our client needs us to add new feature or change a feature in our system then we are going to change everything.

* Product Specifications

If there are any other specifications that can be added to the system to make it perform even better, we will have to look at the environment first then check the market for our competitors.

1. **SECURITY ASPECTS**

Neural network based applications has been used successfully in the area of networks security as an intrusion detection system, misuse detection and firewalls. Also in the field of application security, neural network has been proposed to be a virus detection system. It would be noticed however, that these neural networks can only provide a form security after software deployment. The project manager is in charge of deciding who the information of the system be given to, the client is the one who has the most rights to have any information related to the proposed system.

The availability of the information of the system will be given according to the roles the people play in the actual development of the system.

The artificial neural network voltage security monitoring and control is used. The neural network uses its association mechanism, the inherent parallel information processing nature of the neural network, which provides the capability of fast computation, enables the neural network approach to meet the demands of real time monitoring control