

stdSEM[®] Initiation Phase

Date: 16. 7. 1998

Copyright © Siemens AG Österreich 1997. All rights reserved.

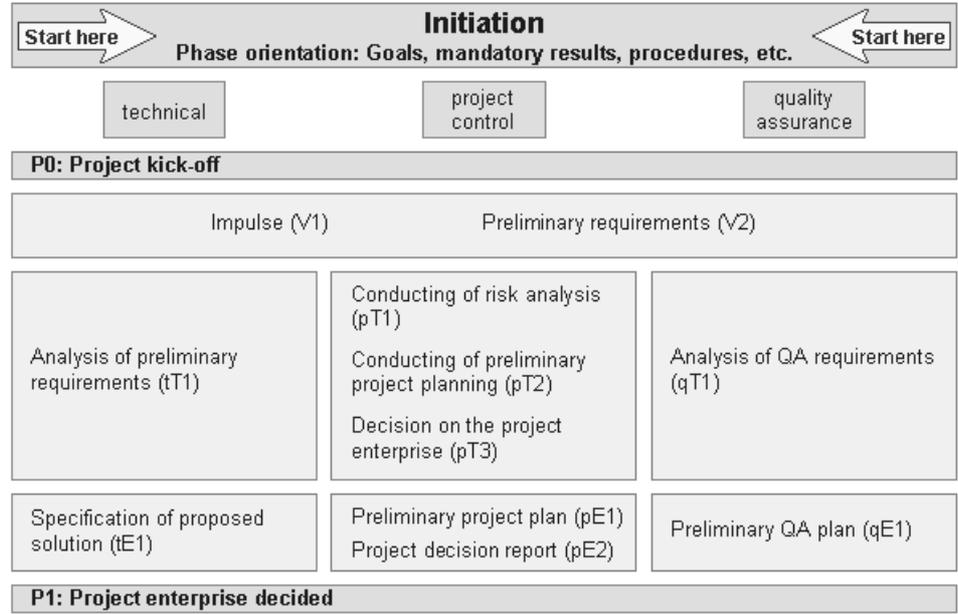
Table of contents	1
stdSEM Initiation	3
stdSEM Initiation Orientation	4
stdSEM Initiation Orientation - Phase Goals	5
stdSEM Initiation Orientation - How Do I Reach the Goals	6
stdSEM Initiation Orientation - What Results are Available at the End of the Phase?	7
stdSEM Initiation Orientation - What About Maintenance Projects?	8
stdSEM Initiation Orientation - What About Non-SW Development?	9
stdSEM Initiation Orientation - Incremental Delivery Model	10
stdSEM Initiation Orientation - Evolutionary Development Model	11
stdSEM Initiation Orientation - Prototyping	12
stdSEM Initiation Orientation - Spiral Model	13
stdSEM Initiation - Preconditions	14
stdSEM Initiation - Activities	15
stdSEM Initiation - Results	16
stdSEM Initiation - Technical	17
stdSEM Initiation - Project Control	18
stdSEM Initiation - Quality Assurance	19
stdSEM Initiation CM	20
stdSEM Initiation PM	21
stdSEM Initiation QA	22
stdSEM Initiation RR	23
stdSEM Initiation Milestones	24
stdSEM Initiation tT1 Analysis of Preliminary Requirements	25
stdSEM Initiation tT1 Analysis of Preliminary Requirements - Checklist	26
stdSEM Initiation pT1 Conducting of Risk Analysis	28
stdSEM Initiation pT1 Conducting of Risk Analysis - Checklist	29
stdSEM Initiation pT2 Conducting of Preliminary Project Planning	31
stdSEM Initiation pT3 Decision on the Project Enterprise	32
stdSEM Initiation qT1 Analysis of QA Requirements	33
stdSEM Initiation tE1 Specification of Proposed Solution	34
stdSEM Initiation tE1 Specification of Proposed Solution Table of Contents	35
stdSEM Initiation tE1 Specification of Proposed Solution - Checklist	36
stdSEM Initiation tE1 Specification of Proposed Solution - Checklist Example	38
stdSEM Initiation pE1 Preliminary Project Plan	42
stdSEM Initiation pE1 Preliminary Project Plan Table of Contents	43
stdSEM Initiation pE1 Preliminary Project Plan - Checklist	44
stdSEM Initiation pE1 Preliminary Project Plan - Checklist Example	47
stdSEM Initiation pE2 Project Decision Report	51
stdSEM Initiation pE2 Project Decision Report Table of Contents	52
stdSEM Initiation pE2 Project Decision Report - Checklist	53

Table of contents

stdSEM Initiation pE2 Project Decision Report - Checklist Example	54
stdSEM Initiation qE1 Preliminary QA Plan	55
stdSEM Initiation qE1 Preliminary QA Plan Table of Contents	56
stdSEM Initiation qE1 Preliminary QA Plan - Checklist	57
stdSEM Initiation qE1 Preliminary QA Plan - Checklist Example	59



Initiation Phase



Siemens AG Österreich, Program and Systems Engineering PSE
 Contact: [stdSEM Webmaster](#)
 Last modified: 07/15/98 16:00
 Copyright © Siemens AG Österreich 1997. All rights reserved.

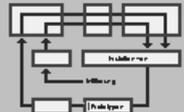
Orientation in the Initiation Phase

 To overview of the phase

 Quiz

<p>Phase goals</p> 	<p>How do I reach the goals?</p> 	<p>What results must be produced?</p> <p>must should may</p>
<p>What about maintenance projects?</p> 	<p>What about non-SW development?</p> 	

What should I watch out for if I decide not to use the waterfall model?

<p>Spiral model</p> 	<p>Prototyping</p> 	<p>Evolutionary development model</p> 	<p>Incremental development model</p> 
--	---	---	---

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Back

Initiation Phase Goals

The major goal of the Initiation phase is to reach a decision on whether the project is to be conducted or not - are we to execute the enterprise or not ("go - no go decision")?

To arrive at a reasoned answer to this question, the activities and results in this phase have been structured to **minimize the project risk**. This is intended to prevent "sliding" into a project.

Two alternatives are possible in the case of a **positive decision**:

- The enterprise is conducted in the form of a **project** (based on the SEM development method or other development method).
- The enterprise is conducted, but **not** in the form of a **project** (e.g. one-off lectures, hourly consulting without preparation, sporadic consulting, troubleshooting on request, etc.). In such scenarios, the project should be terminated immediately after the project decision (the report required for termination can then consist of only a few lines in the project decision report).

In the case of a **negative decision**, the Termination phase is initiated immediately.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Back

How Do I Reach the Goals of the Initiation Phase?

All activities and results which SEM requires in the Initiation phase are geared to the decision on whether or not to conduct the project.

The **total effort for the activities of the Initiation phase** depends greatly on the particular enterprise:

- In the case of small projects with familiar technology, where version changes are performed with familiar subject areas and personnel have adequate training, the effort can amount to merely a few hours or days (with greatly reduced level of documentation).
- Since the Initiation phase is geared towards **minimizing risk**, considerable effort may be required in order to provide an adequate base for reaching a project decision. This is particularly true for:
 - Larger projects
 - New tasks
 - Fixed-price orders
 - Projects involving less unfamiliar technology

The key results are the **specification of proposed solution, preliminary project plan** and **preliminary QA plan**. All analyses relating to this project are included in these results. They therefore provide the basis for deciding whether and how the project can be conducted.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



What Results are Available at the End of the Initiation Phase?



Back

The following degrees of obligation apply for the results available at the end of the Initiation phase:

must	Specification of Proposed Solution Preliminary Project Plan Preliminary QA Plan Project Decision Report
-------------	--

Note: In smaller projects, several of these documents may be combined into a single document, though the contents must be structured to allow easy identification.



Back

What About Maintenance Projects?

What is a maintenance project?

A project is termed a maintenance project if it involves performing work on an existing product. There can be three reasons for changing an existing product:

- **Eliminating errors**
- Performing **functional changes** (extensions, adaptations)
- Performing **non-functional changes** (porting, optimizations).

Virtually all maintenance projects are dealt with using the evolutionary development model. Each shipment results in a new product version (following error elimination and/or incorporation of change requests or optimizations). Since a maintenance project is always based on an existing product, the software code is accompanied by documents generated during earlier versions.

What are the typical operations in the Initiation phase?

- The **project management type** must be specified in order to ensure that the necessary resources and project staff are available. Will the maintenance work be carried out in a single block of work, distributed on an ongoing basis (with what level of utilization?) or upon request as required? What response time is required for error messages and change requests?
- If the project is taken over from an earlier project team, it is important to clarify which **documents, sources** and **SW/HW** (possibly with licenses) have been created by that team and can be **reused**. Is a competent contact person available if questions or problems which have their roots in the former development team arise during the course of the maintenance work?
- The creation/extension of a **regression test** (automatic or with existing test case lists) must be scheduled for checking functions which have not been changed.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



What About Non-SW Development?



Back

Non-SW projects also have to pass through the Initiation phase

The project type is essentially unimportant in the Initiation phase, since non-SW projects (e.g. consulting, studies, etc.) also need to be initiated. All activities and results can be applied **analogously** to any desired projects (instance eeSEM must be applied for pure HW development).

Example: Specification of proposed solution

The specification of proposed solution forms the basis from a technical perspective for deciding whether the project is to be conducted. It consists of a description of the solution and information as to its feasibility. Even non-SW projects need to be analyzed in terms of their feasibility.

- How can the enterprise (e.g. consulting) be resolved and with what means?
- Have there already been similar projects?
- Does the know-how already exist or does it first need to be acquired?
- Are special tools required?

Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Incremental Delivery Model in the Initiation Phase



Back

General

The life cycle approach to be adopted during the rest of the project should be considered in the Initiation phase. The phase-neutral themes (depiction of the [life cycle approach](#) with decision-making tools for supporting selection) contain an overview and a description of the models. A decision about the life cycle approach to be used during the further course of the project can be made as early as this phase if the preconditions are met.

Incremental delivery model

- **First initiation**

If a project is to be initiated for the first time, all activities and results must take the form set out here.

- **Further initiations**

If the decision to perform further initiations for individual releases is made on a project-specific basis or on the basis of the business process, certain deviations from the mandatory first initiation of the project may occur in the activities and mandatory results set out in the project or business process.

When does a new formal initiation need to be performed?

It can therefore be useful, before developing each release, to carry out a new formal initiation if long periods have elapsed between successive releases or new impulses are generated from the business process, thereby enabling execution conditions, for example, to be checked again. However, every effort should be made to ensure the greatest possible continuity when developing a new release.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Evolutionary Development Model in the Initiation Phase



Back

General

The life cycle approach to be adopted during the rest of the project should be considered in the Initiation phase. The phase-neutral themes (depiction of the [life cycle approach](#) with decision-making tools for supporting selection) contain an overview and a description of the models. A decision about the life cycle approach to be used during the further course of the project can be made as early as this phase if the preconditions are met.

Evolutionary development model

- **First initiation**

If a project is to be initiated for the first time, all activities and results must take the form set out here.

- **Further initiations**

If the decision to perform further initiations for individual versions is made on a project-specific basis or on the basis of the business process, certain deviations from the mandatory first initiation of the project may occur in the activities and mandatory results set out in the project or business process.

When does a new formal initiation need to be performed?

It can therefore be useful, before developing each version, to carry out a new formal initiation if there are long periods between successive versions or new impulses are generated from the business process, thereby enabling execution conditions, for example, to be checked again. However, every effort should be made to ensure the greatest possible continuity when developing a new version.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Prototyping in the Initiation Phase



Back

General

The life cycle approach to be adopted during the rest of the project should be considered in the Initiation phase. The phase-neutral themes (depiction of the [life cycle approach](#) with decision-making tools for supporting selection) contain an overview and a description of the models. A decision about the life cycle approach to be used during the further course of the project can be made as early as this phase if the preconditions are met.

Prototyping

The prototyping in the Initiation phase does not differ at this stage from the "standard" waterfall model. As in the waterfall model, all activities and results of the Initiation phase therefore need to be dealt with in the form set out here.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Spiral Model in the Initiation Phase



Back

General

The life cycle approach to be adopted during the rest of the project should be considered in the Initiation phase. The phase-neutral themes (depiction of the [life cycle approach](#) with decision-making tools for supporting selection) contain an overview and a description of the models. A decision about the life cycle approach to be used during the further course of the project can be made as early as this phase if the preconditions are met.

Spiral model

The spiral model in the Initiation phase does not differ at this stage from the "standard" waterfall model. As in the waterfall model, all activities and results of the Initiation phase therefore need to be dealt with in the form set out here.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation Phase: Overview of Preconditions



Two preconditions must exist for the Initiation phase:

- **V1: Impulse**

A **project impulse** can be initiated, for example, by a specific inquiry  or by considerations to participate in a call for tender. It can be triggered either externally or from within the own organizational unit and requires the preliminary requirements to be dealt with. The impulse must be documented in writing.

- **V2: Preliminary requirements**

Preliminary requirements can exist, for example, in the form of requirement lists, call-for-tender documents or prepared requirement documents. They are generally neither complete nor consistent, but must be used as a basis for drawing up the phase results.

Note:

Inquiries or calls for tender are not subject to examination in accordance with EN ISO 9001 "Contract approval".

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation Phase: Overview of Activities



To overview
of the phase

technical

- Analysis of preliminary requirements (tT1)
The analysis of preliminary requirements serves as a basis for preparing the project decision from a technical perspective. The results of this activity must be documented in the specification of proposed solution.

project control

- Conducting of risk analysis (pT1)
A risk analysis is particularly important for larger projects and projects involving problematic constraints (fixed-price orders, unfamiliar technology, etc.).
- Conducting of preliminary project planning (pT2)
The preliminary project plan serves as a basis for preparing the project decision from the project control perspective.
- Decision on the project enterprise (pT3)
The decision on the project enterprise is based on the existing documents and the documents drawn up during this phase. The decision must be made by a group or person responsible for such.

quality assurance

- Analysis of QA requirements (qT1)
In the preliminary QA plan, the activities are focused primarily on collating the requirements and the consequences for project management.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation Phase: Overview of Results



To overview
of the phase

technical

- Specification of proposed solution (tE1)
The specification of proposed solution is based on the analyzed preliminary requirements. It must essentially outline the planned deliverables and planned solution path.

project control

- Preliminary project plan (pE1)
The preliminary project plan must set out the most important technical data for the planned project from the perspective of the initial analyses (for example, responsibility for the project, effort and deadline frameworks).
- Project decision report (pE2)
The decision as to whether to conduct the project enterprise must be in writing and sufficiently reasoned. The decision will generally be based on other phase results.

quality assurance

- Preliminary QA plan (qE1)
The preliminary QA plan must set out the key QA requirements for the planned project from the perspective of the initial analyses (procedure model, quality requirements and quality assurance requirements).



Initiation Phase: Overview of Technical Elements



To overview
of the phase

Preconditions

No particular technical preconditions.

Activities

- Analysis of preliminary requirements (tT1)
The analysis of preliminary requirements serves as a basis for preparing the project decision from a technical perspective. The results of this activity must be documented in the specification of proposed solution.

Results

- Specification of proposed solution (tE1)
The specification of proposed solution is based on the analyzed preliminary requirements. It must essentially outline the planned deliverables and planned solution path.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation Phase: Overview of Project Control Elements



To overview
of the phase

Preconditions

No particular project control preconditions.

Activities

- Conducting of risk analysis (pT1)
A risk analysis is particularly important for larger projects and projects involving problematic constraints.
- Conducting of preliminary project planning (pT2)
The preliminary project plan serves as a basis of preparing the project decision from a project control perspective.
- Decision on the project enterprise (pT3)
The decision on the project enterprise is based on the existing documents and the documents drawn up during this phase. The decision must be made by a group or person responsible for such.

Results

- Preliminary project plan (pE1)
The preliminary project plan sets out the key technical data for the planned project from the perspective of the initial analyses.
- Project decision report (pE2)
The decision as to whether to conduct the project enterprise must be in writing and sufficiently reasoned. The decision will generally be based on other phase results.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation Phase: Overview of the Quality Assurance Elements



To overview
of the phase

Preconditions

No particular quality assurance preconditions.

Activities

- Analysis of QA requirements (qT1)
When analyzing the QA requirements, the activities are focused primarily on collating the requirements and the consequences for project management.

Results

- Preliminary QA plan (qE1)
The preliminary QA plan must set out the key QA requirements for the planned project from the perspective of the initial analyses (procedure model, quality requirements and quality assurance requirements).

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation: Important CM Themes



To overview
of the phase

No specific activities relating to configuration management have been envisaged for the Initiation phase.

Initial considerations relating to CM can naturally be examined as part of the preliminary project planning work (e.g. including the reuse of CM systems and tools used earlier, cooperation with other projects as regards the CM system, use of the client's CM system etc.).

A description of the configuration management throughout the course of the project can be found in the [phase-neutral themes](#).

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation: Important Themes of Project Management



To overview
of the phase

Project planning plays a significant role in project initiation. It is after all necessary to plan the approximate scope of the project (personnel effort and costs), the time framework and deployment of personnel, and to identify and assess possible project risks at the earliest possible stage.

The creation of a preliminary project plan and the conducting of a risk analysis are therefore extremely important even at this early stage.

A full description of the project planning work throughout the course of the project can be found in the phase-neutral themes.

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*



Initiation: Important QA Themes



Quality assurance plays an important role as early as the project initiation phase. It covers such aspects as analyses of the quality and quality assurance requirements and the identification of associated problems and risks for the project.

A preliminary QA plan must therefore be drawn up.

A full description of quality assurance throughout the course of the project can be found in the phase-neutral themes.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Initiation: Important RR Themes



The Initiation phase does not yet contain any mandatory activities regarding reuse and reusability.

Initial considerations relating to RR can naturally be made as early as the preliminary project planning stage (e.g. reuse of methods, tools, know-how and program sections from earlier projects or bought-in software). These considerations should be documented in the preliminary project plan.

One particularly practical aspect of the Initiation phase is also highly important - namely that the **reuse of know-how** is critical for the **risk analysis**. It is only really possible to assess risks if you know them inside out!

A description of reuse and reusability throughout the course of the project can be found in the [phase-neutral themes](#).

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*



To overview
of the phase

Milestones of the Initiation Phase

P0: Project kick-off

This milestone is reached if preliminary requirements exist and if the decision has been made to use these requirements. This decision does not yet involve executing a tender (this will not take place until the Definition phase) but merely initiating the project.

Milestone P0 thus marks the start of the project. However, it is also possible to label the activities of the Initiation phase as being preliminary in nature and not to begin the project until P1 (the decision as to whether the enterprise will become a project will not be decided until this point).

P1: Project enterprise decided

This milestone is reached if all mandatory results of the phase are in place. The mandatory results are:

- Specification of proposed solution
- Preliminary project plan
- Preliminary QA plan
- Project decision report

If the project decision report is positive, the project data should be entered in the PSE project control tool PROCON no later than this stage (together with the key data of the project, milestones, provisional effort and deadlines).

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

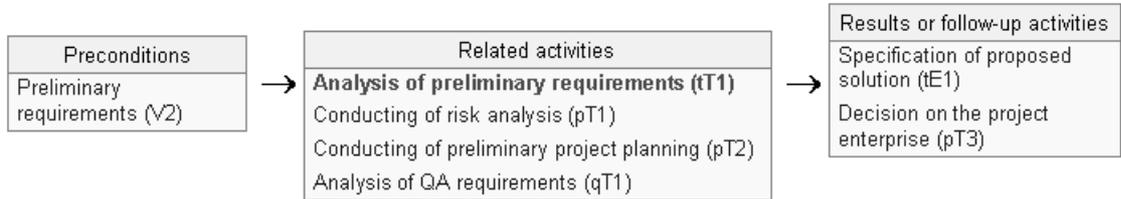
Copyright © Siemens AG Österreich 1997. All rights reserved.



Analysis of Preliminary Requirements (tT1)



Activity checklist



To be performed by

Designated project manager and designated personnel , possibly additional experts from the specialist area or technical division.

Goals

The preliminary requirements must be prepared to a level which allows a solution to be outlined and a decision made about execution. The results of this activity must be documented in the specification of proposed solution.

Execution

The preliminary requirements first need to be examined - are all the requirements complete and what still needs to be added in order to be able to derive conclusions about the approximate scope of the project? - Are the requirements sufficiently detailed?

Where it is expedient and feasible, discussions should be held with the client (possibly also with end customers or users) in order to resolve any outstanding points and eliminate any major areas of uncertainty.

In a second stage, the primary solution path (possibly with alternatives) must be drawn up.

Notes

The preliminary requirements should only be analyzed to the extent necessary to reach a decision on whether to conduct the project (extensive analyses should be conducted within the scope of a project - the specification of proposed solution is not to be regarded as a solution study).



Checklist for Analyzing the Preliminary Requirements (tT1)

Questions:

- **What preliminary requirements exist?**
Preliminary requirements can differ greatly - they range from vague memos and personal preferences regarding calls for tender and internal requirement documents, right up to user requirements specifications of varying scope. The extent of the analysis depends greatly on the quality of the requirements.
- **Where do the preliminary requirements originate from?**
The requirements originate from calls for tender, from Siemens-internal clients who are already known, from new clients, etc. The source of the requirements is important for determining the type of cooperation to be used in clarifying unresolved questions.
- **Are the preliminary requirements sufficiently detailed to derive what the product is intended to achieve? - if not, where and how can further requirements be obtained?**
It is not a matter of being able to describe all the product features in detail, but merely to obtain a sufficient degree of certainty as to the general scope of the product.
- **How must the new software work and how is the product to be used?**
Are there any additional conditions which need to be taken into account when the product is used, e.g. the system environment, cost ceilings, time limits for the development work or specifications regarding the programming language to be used?
- **Which requirements are important and which are less important?**
One possible method of rating the importance of requirements is known as *Quality Function Deployment* (based on Richard E. Zultner).
- **Have projects with similar preliminary requirements already been realized?**
Perhaps you can use the experience of earlier projects as a basis (personal know-how, domain expertise, development environment, technical solution, etc.) in order to save both time and costs through reuse.

Required activities:

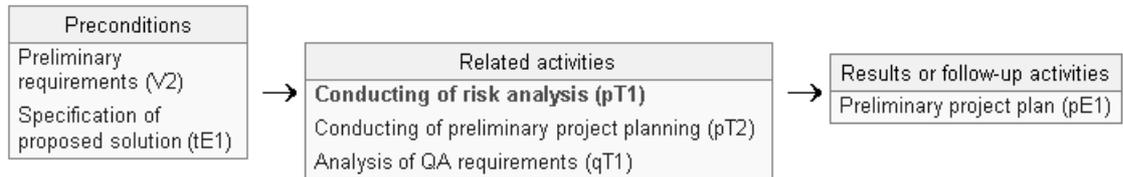
- Precondition for all activities for analyzing the preliminary requirements is that the developers familiarize themselves with the client's problem areas.
- At the start of the analysis work, the developers are engaged primarily in collecting facts.
- To clarify the preliminary requirements and give vague ideas more concrete form, discussions can be held between the client, experts in the problem area, and developers.
- One aspect which is more important than obtaining a deep understanding of a particular area is to see the problem from a number of different perspectives (viewpoint analysis), to define the project goals and to search for a rough solution to the problem.
- The information which is collected must be processed in a way which facilitates planning and decision-making. It is important in this regard to sketch out the approach to the solution and the solution path. Where several alternatives are possible, the various options should be sketched out together with their advantages and drawbacks.
- By the end of the phase, a complete overview should be available to enable a rough assessment of the costs and to provide reliable information as to the technical feasibility.

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*



Activity checklist

Conducting of Risk Analysis (pT1)



To be performed by

Designated project manager, QA manager.

Goals

A risk analysis has the purpose of identifying and assessing potential project risks (both internal and external) at the earliest possible date. A separate detailed risk analysis should therefore always be performed for larger projects or projects performed under complex constraints (new technologies, fixed prices, product development, etc.). The results of the risk analysis should be documented in the preliminary project plan.

Execution

The risk analysis is best executed using a risk checklist and the requirement documents in parallel with the preliminary project plan.

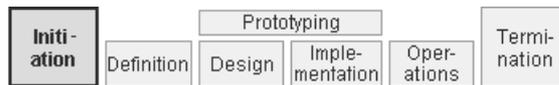
Notes

The amount of detail for the risk analysis will depend on the scope and importance of the task. It is often expedient to carry out a multi-stage risk analysis - initially as a basis for supporting the project decision and later for drawing up tenders for subsequent project phases (in the spiral model, a risk evaluation is mandatory for each development phase).

A brochure on the subject of [⇒ W risk management](#) has been drawn up by the [⇒ P Project Management Support Center](#). This brochure also contains a full checklist for risk analysis, subdivided into different types of risk.

The [⇒ P SEM Guidelines "Project Initiation"](#) contains a brief checklist for risks (also available as [⇒ X Excel spreadsheet](#)).

The two checklists can be used for both the Initiation phase and subsequent risk analyses.



Back to the activity

Checklist for Conducting of Risk Analysis (pT1)

Note: The → [SEM Guidelines "Project Initiation"](#) cover both the actual project initiation to SEM and the check of the tender. This checklist has been based very substantially on these Guidelines, but deals with the various aspects of the Initiation phase in greater detail. Five key areas are distinguished:

- **Task definition**
- **Feasibility**
- **Available experience**
- **Determination of effort and costs**
- **Project management**
- and **risk determination** in the narrower sense.

Task definition

- Can the salient features of the required product be identified from the preliminary requirements and the analysis of these requirements?
- Can the scope of the task be restricted?
- How complex is the task?
- Do the existing documents provide a basis for drawing up a software requirements specification or a tender?

Feasibility

- Has the task been broken down into work packages?
- Has rough effort planning been conducted?
- Has rough deadline planning been conducted?
- Has the planned solution been tested on a technical level?
- Will sufficient personnel be available at the right times?

Available experience

- Is the necessary expertise available for analyzing the requirements (domain know-how, analysts)?
- Do personnel have experience of the planned hardware / operating system environment?
- Do personnel have experience of the planned system architecture and software platform (client/server, DB, real time, etc.)?
- Do personnel have experience of the planned methods (analysis and design, OO, programming language, GUI, etc.)?
- Do personnel have experience of tools (CASE, CM, test tools, etc.)?
- Does the envisaged project manager already have experience of managing similar projects?
- Can missing know-how be acquired in good time through training?

Determination of effort and costs

- Has the effort estimation been conducted and documented using an approved method?
- Has effort for project management and CM been taken into account explicitly?
- Has effort for QA (reviews, tests) been taken into account explicitly?
- Has effort for building up know-how been taken into account explicitly?
- Have travel costs been taken into account explicitly?
- Has the estimation of the effort been influenced by pricing and deadline specifications?
- Have costs for the necessary software tools and hardware been taken into account?

- Have costs for the acceptance procedure been taken into account?
- Have costs for warranty, operations support etc. been taken into account?
- Have risk factors for costing been taken into account explicitly?

Project management

- Has a project manager been defined?
- Was the project manager involved in initiating the project?
- Can tried and tested solutions be used for planning and CM?

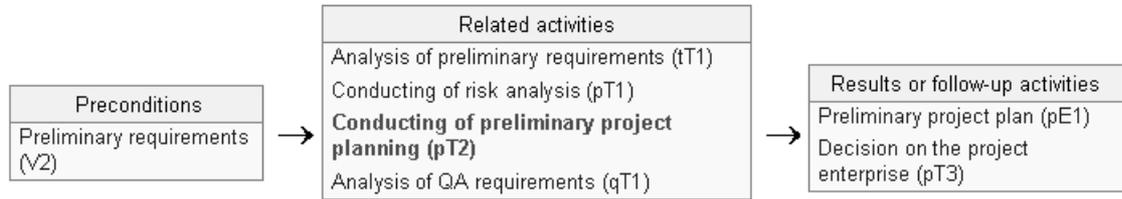
Risk determination

- Do critical requirements exist and where are these to be found (deadlines, functions, performance, standards, etc.)?
- If the project is being executed in conjunction with partners, has the type of cooperation  and responsibility been planned / defined exactly? Are the partners already known?
- If outsourcing is being used, do any risks exist as regards compliance with deadlines or quality (e.g. unknown suppliers); does this have any serious consequences for the project?
- Can the project be handled at several locations? What problems could arise as a result?
- Is the system relevant in terms of safety and security; can errors in operation have serious consequences?
- What is the situation as regards warranties and liabilities as well as other high-level commercial and technical risks?

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*



Conducting of Preliminary Project Planning (pT2)



To be performed by

If possible, designated project manager of the future project.

Goals

On the basis of the preliminary requirements and an analysis of these, the framework conditions and possible course of the project **must** be drawn up in order to provide a stable basis for the project decision from a project control perspective. The results of the preliminary project planning work must be documented in the preliminary project plan.

Execution

A rough overview of the product components that need to be developed (from the preliminary requirements or the specification of proposed solution currently being developed) must be available at the start of the planning work. This will provide a basis for planning the scope of the project (effort and costs), the time framework and the course of the project.

A further important aspect is the preliminary planning of personnel deployment and nomination of the project managers ("Do we actually have the personnel we need to handle this task?").

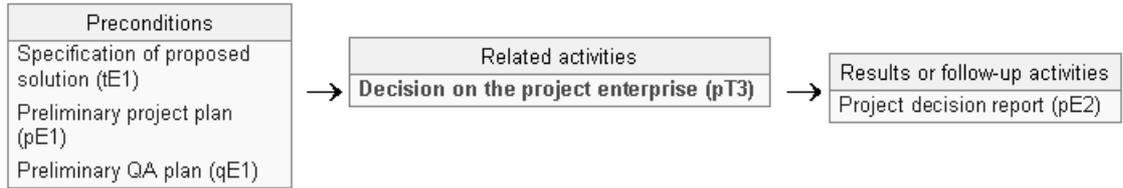
A risk analysis (pT1) must be conducted in parallel to the key aspects of project planning.

Notes

The preliminary project planning work essentially follows the same lines as those described for the project planning work (see section [Project planning](#) in the description of the phase-neutral themes).



Decision on the Project Enterprise (pT3)



To be performed by

Designated project manager, department manager, business unit commercial manager.

Goals

The documents which have been drawn up must be used as a basis for deciding whether the project enterprise is to be conducted as a project, is not to be conducted as a project or is not to be conducted at all.

Execution

The specification of proposed solution, preliminary QA plan and preliminary project plan are consulted within the framework of a meeting to decide whether the project is to be conducted.

Notes

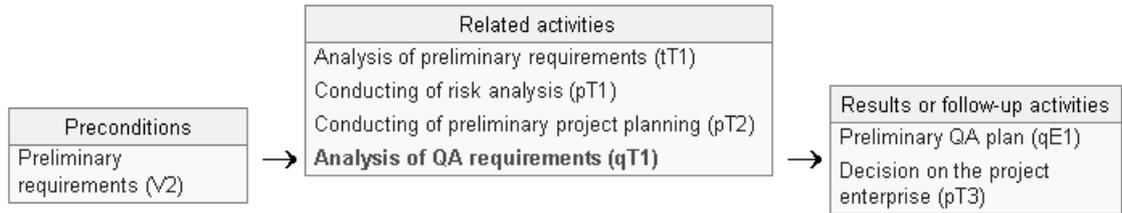
The → SEM Guidelines "Project Initiation" provide support in reaching a decision about the project enterprise. These Guidelines cover the definition and review of project-specific specifications, definitions of the order type (general contractor, fixed prices, business charged on the basis of effort, provision of personnel, consulting) and the necessary types of contracts and tenders.

Not all results from the Initiation phase are required if the **project decision is negative**. If one of the results available is a "k.o." criterion, for example, it will be naturally expedient to abort the Initiation phase with a negative project decision.

If a decision is made **not** to conduct a project, this still does not mean that an inquiry will be rejected. It merely means that a task may not be performed as a project since it does not comply with the project definition (e.g. one-off contracts, hourly consulting without preparation, sporadic consulting, troubleshooting on request, etc.).



Analysis of QA Requirements (qT1)



To be performed by

Designated QA manager (it is also expedient when initiating a project that QA considerations are undertaken by an "independent" person wherever possible).

Goals

To prepare the decision about whether to conduct the project, from the perspective of quality assurance. The results of this activity **must** be documented in the preliminary QA plan.

Execution

This involves the collection and evaluation of important QA requirements. The details already known from the preliminary requirements and any discussions with the client **must** be collated and analyzed in terms of their importance for the planned project (e.g. specified development method and life cycle approach, mandatory methods, procedures and tools; quality and quality assurance requirements; relevance to safety and security, and official safety certificates; certificates required, etc.).

Notes

When analyzing the QA requirements, the activities are focused primarily on collecting the requirements and the consequences they have for project management; the specific QA measures are not defined until the QA planning stage of the Definition phase.



-  Contents
-  Document checklist
-  WinWord template

Specification of Proposed Solution (tE1)

Purpose

Technical support for the project decision. This essentially involves a description of the solution and information as to its feasibility.

Content

Firstly, the preliminary requirements must be documented (defined starting point for further considerations). These must then serve as the basis for outlining in broad terms the proposed solution (product) and the possible solution path.

The specification of proposed solution must be **checked**.

Notes

The statements in the specification of proposed solution are geared primarily to devising a solution within the framework of a **project**. If the solution consists solely of the provision of personnel, for example, a brief **analogous** description should be given of how the personnel are to be deployed (deployment conditions as solution path). If the only decision to be made is whether a subsequent tender is to be drawn up, certain parts may not be required.

<p>Activities leading to this result:</p> <ul style="list-style-type: none"> ● <u>tT1 Analysis of preliminary requirements</u> 	
<p>Follow-up activities (in this phase):</p> <ul style="list-style-type: none"> ● <u>pT3 Decision on the project enterprise</u> 	



Table of Contents for Specification of Proposed Solution (tE1)


Back to the
result

1. Introduction
 - 1.1 Purpose of the document
 - 1.2 Validity of the document
 - 1.3 Definitions of terms and abbreviations
 - 1.4 Relationship with other documents
2. Purpose, goal and application of the solution
3. Primary requirements
4. Proposed solution
5. Proposed solution path
6. Possible solution alternatives
7. Literature

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*



Back to the
result

Checklist for Specification of Proposed Solution (tE1)

1 Introduction

1.1 Purpose of the document

The specification of the proposed solution serves as a technical basis for the project decision report on execution / non-execution of the project and on the type of execution to be performed, which is described in the preliminary project plan and preliminary QA plan.

Formulation proposal:

The purpose of the proposed solution specification is to check the technical feasibility and to identify a possible solution path for the planned project enterprise described below.

1.2 Validity of the document

The proposed solution specification is of only limited scope since, in the Initiation phase, it serves as a basis for making decisions on execution / non-execution of the set task as a project. The content of this document - if the project decision report is positive - will then be incorporated into the documents of the Definition phase (as a tender of software requirements specification).

This section must also specify the constraints (in addition to the primary requirements) on which the proposed solution specification is based (e.g. development at one / more sites, use of existing HW / SW licenses, etc.), if this affects the proposed solution specification or the solution path.

1.3 Definitions of terms and abbreviations

If necessary, the terms used in the document are to be defined in this section. In particular, important technical terms should be specified.

An alphabetical order is recommendable for the terms and abbreviations.

1.4 Relationship with other documents

How does this document relate to other documents (of the project, solutions of a previous project, etc.)? Does the proposed solution path have any constraints for project control and quality assurance?

2 Purpose, goal and application of the solution

This section must clearly identify the task which is to be resolved, what this is intended to achieve and how the solution is to be used.

3 Primary requirements

This section must specify the existing primary requirements. If the primary requirements which have led to the Initiation phase being triggered are available in written form, it is sufficient merely to refer to these (they would be best enclosed in an annex to the proposed solution specification).

4 Proposed solution

The "solution" describes '**what**': What product is to be created, what is the product to look like and what is it to do? These questions are best covered by means of a rough description of the deliverables, i.e. all components in the product which is to be supplied.



Example

Checklist



Example

Checklist



Example

Checklist



Example

Checklist

5 Proposed solution path

The "solution path" describes "**how**": How can we arrive at this solution? This section therefore deals with initial considerations relating to technical implementation and outlines the solution path (use of tools, use of standard software or COTS (commercial off-the-shelf software), possible reuse of components already developed).



Example

Checklist

Particularly important in this context is a preliminary decision as to whether the solution can be implemented either in full or to a large extent using existing products or whether new developments will be needed for the most part.

If the user already has a rough idea (or specifications) for the design of the system, these considerations should be stated in this section (e.g. client / server architecture, use of specific database system, etc.).

6 Possible solution alternatives

Where they are significant, possible solution alternatives must be outlined, together with their relevant advantages and disadvantages (this is particularly true for new tasks where the specifications have little detail).



Example

Checklist

Alternative solutions can relate to both the **solution itself** (which product features are to be developed, what form is the product interface to take, input / output media, etc.) as well as different **solution paths** (e.g. different HW / SW platforms, advantages and disadvantages of using specific development environments, discussion on adaptation and use of COTS (commercial off-the-shelf software) compared to complete own development, etc.).

7 Literature

Checklist

This section must set out all documents cited in the proposed solution specification together with the documents which the proposed solution specification is based on (such as technical specifications, product sheets, experience reports, tenders for outsourced goods, etc.).

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Back to the
result

Example of Specification of Proposed Solution (tE1)

1 Introduction

1.1 Purpose of the document

The specification of proposed solution is intended for checking the technical implementability of the planned customer information system described below and to identify a possible solution path.

1.2 Validity of the document

The specification of proposed solution is based on the compelling requirement to essentially do the job with the existing HW resources. It has also been assumed that the new version of our **Super-Banker** system solution which has already been announced will not be available for operation by March 199x and that own development work will be needed.

1.3 Definitions of terms and abbreviations

BIS: Bank Branch Information System

LAN: Local Area Network

Super-Banker: System solution for handling bank payment transactions

1.4 Relationship with other documents

Information on the various functions of the new Super-Banker version has been obtained from the internal functional description.

2 Purpose, goal and application of the solution

Information on a bank branch's customers and their accounts should be managed in a single information system. Its primary goals are:

- to provide fast, up-to-date information on customers and their accounts in order to provide customers with fast and comprehensive information
- to support administration of payment transactions in order to ensure cost-effective and reliable processing of these transactions
- to automatically process standing orders and account closures

Account statement printers are to be connected to the system so that the customer himself can retrieve information on an individual account. Bookings to external accounts are transferred via remote data transmission to a (by that time) existing central system for processing.

Training courses are provided for bank staff. A maximum of two employees per branch who already have a basic knowledge of IT will be trained to administrator level in an additional course.



Back to the
checklist

Example



Back to the
checklist

Example

3 Preliminary requirements

Customers' requirements are recorded in the form of a brief memo (an extract is set out below):



Example

"All aspects of account management, cash (deposits and withdrawals), semi-cash (cashing of checks) and cashless payment transactions (transfers) conducted by our branches have so far been handled by an account management system. However, the current systems failed to provide adequate support to our staff and in particular to customer advisers. Information on customers and their accounts had to be extracted laboriously from each individual account. Even simple queries and calculations relating to multiple accounts held by a single customer could not be dealt with by the customer adviser directly.

We are hoping that a bank branch information system capable of extending the existing functionality of the account management system and of automating the processing of queries by customer advisers will make life easier for our staff. We are also hoping to enhance customer support and improve productivity."

4 Proposed solution

Functionality, external behavior

A superordinate Bank Branch Information System (BIS) must be set up for the clients' various branches. The functionality and external behavior of this system can be subdivided initially into the following five areas - account management, payment transactions, information services, automatic operation and system management:

a) Account management

The analysis of the customer and account data which needs to be managed reveals that the following functionalities are needed:

- Setting up new accounts
- ...

b) Payment transactions

Payment transactions require the following functionalities:

- Deposits to and withdrawals from customer accounts
- ...

c) Information services

Discussions with customer advisers indicate that the following types of queries need to be supported:

- Produce an up-to-date statement for account "007"
- ...

d) Automatic operation

An analysis of the various system tasks that need to be automatically processed reveals a whole array of time-critical, periodic functionalities:

- Booking of standing orders which fall due
- ...



Example

e) System management

System management supports administrators in their work by providing the following types of services:

- Creating backups of the complete data
- ...

User profile

Only staff employed by the bank branch are allowed to use the Bank Branch Information System. These users can be categorized into three groups:

- Tellers process cash transactions
- ...

Acceptance criteria

The primary criteria are the run times of the various functions and the correctness of payment transactions and automatic operation, etc.

Development, operational and maintenance environments, interfaces, constraints

Each branch should have a local copy which functions independently of the systems used by other branches. For this purpose, each branch will be provided with a host computer connected to several graphical terminals. The system supports multi-user operation.

The development and maintenance environment for the project is provided by a UNIX operating system, while the operational environment takes the form of a VAX / VMS operating system. Data transfer between the external central system and BIS is via a Datex-P dedicated line.

The system is equipped with an interface to a laser printer (unknown make) and a statement printer (Siemens Nixdorf).

A graphical user interface of a popular standard (e.g. OSF Motif) must be integrated.

...

5 Proposed solution path

The system is based on a client/server architecture with local network (LAN).

All customer and account data is stored in a relational database. Storage of the static basic data, i.e. the General Terms and Conditions, interest tables and charge rates has not yet been clarified. The client is attending to data procurement. This does not fall within the scope of the project.

X/open is a suitable tool for the graphical user interface.

Changes and/or extensions (updates) to the static basic data are global and are recorded in the central system. The central system transfers its updates to the branch systems which automatically adopt the changes.

Cash payment transactions (deposits and withdrawals) which only access accounts in these branches are dealt with within the BIS. Semi-cash payment transactions which involve accessing external accounts (e.g. encashing a Eurocheck) are initially treated by the BIS as payments relating to a special account. This special account processes the payment as if it were a transfer.

Cashless payment transactions are subdivided into various categories. Standing orders are handled by the BIS. The internal account is given the appropriate debit entry, while the credit entry is either transferred to the central system or credited to another account at this branch. Transfers are passed unprocessed to the external trading department where they are processed. They do not need to be examined here in any further detail.



Example

6 Possible solution alternatives

Technical alternatives are virtually ruled out due to the need to integrate the solution into the existing system.



Example

One fact which needs to be borne in mind, however, is that our **Super-Banker** system solution supports the precise function required for automated responses to customer adviser inquiries and is already being used successfully by a number of customers.

It is therefore advisable in principle to examine and assess two alternatives:

- Porting and adapting the required function set supported by Super-Banker to the needs of the customer
- Provision of the entire Super-Banker system with migration or integration of the existing solution (a list of the differences in the functionalities is required)

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Preliminary Project Plan (pE1)



Contents



Document checklist



WinWord template

Purpose

The preliminary project plan provides a basis for deciding on the execution of the project from a project control perspective. It must therefore be sufficiently detailed to be able to answer the following vital questions with the greatest degree of certainty: "Can we do the job at all - and, if so, with what effort and by when?"

Content

The preliminary project plan must contain the key technical data for the planned project from the perspective of the initial analyses (project goal, effort and deadline frameworks, personnel requirements framework, project organization, etc.). One aspect which is particularly important at this point in time is a risk analysis, the results of which need to be incorporated in the preliminary project plan.

The preliminary project plan must be **checked**.

Notes

With each planned project enterprise, a documented preliminary project plan must exist at the time the project decision is made. It is not essential, however, to create a separate document in each case. The preliminary project plan can be combined, where necessary, with the specification of proposed solution and the preliminary QA plan (e.g. in the case of small-scale projects, provision of personnel, or sequences of very similar projects). The most important aspect is that the specified goal be achieved (sufficient degree of certainty for project decision). 📁

<p>Activities leading to this result:</p> <ul style="list-style-type: none"> ● <u>pT1 Conducting of risk analysis</u> ● <u>pT2 Conducting of preliminary project planning</u> 	
<p>Follow-up activities (in this phase):</p> <ul style="list-style-type: none"> ● <u>pT3 Decision on the project enterprise</u> 	



Table of Contents for Preliminary Project Plan (pE1)

Back to the result

1. Introduction
 - 1.1 Purpose of the document
 - 1.2 Validity of the document
 - 1.3 Definitions of terms and abbreviations
 - 1.4 Relationship with other documents
2. Project goal
3. Project organization
 - 3.1 Client
 - 3.2 Project manager
 - 3.3 QA manager
 - 3.4 Project organization
4. Framework for effort
5. Personnel requirements framework
 - 5.1 Qualification
 - 5.2 Histogram of manpower
6. Framework for deadlines
 - 6.1 Start of project
 - 6.2 Duration of project
 - 6.3 Completion / delivery dates
7. Constraints
 - 7.1 Project type
 - 7.2 Processing
8. Risks
 - 8.1 Technical risks
 - 8.2 Quality risks
 - 8.3 Project execution risks
 - 8.4 External risks

Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.



Back to the
result

Checklist for Preliminary Project Plan (pE1)

1 Introduction

1.1 Purpose of the document

The purpose of this project plan is to convey a general overview of the course of the planned project <xyz>.

1.2 Validity of the document

This section must specify the solution and solution path (as reference only!) which the preliminary project planning relates to. Predetermined internal and external constraints (in addition to the client's requirements) for the planning (both technical and organizational) can also be stated in this section. Does this planning only apply for a project start within a specific period of time (e.g. availability of personnel, HW, prices of procured goods, etc.)?

1.3 Definitions of terms and abbreviations

This section is used to define the terms used in the document (e.g. important abbreviations and organizational terms used by the client). Alphabetical order is recommended for listing the terms and abbreviations.

1.4 Relationship with other documents

How is this document related to other documents both within and outside the project (documents from earlier projects, other requirements documents, planning documents, feasibility studies, etc.)? To which proposed solution (document) does the preliminary project plan relate? Do any minor deviations exist to the solution path which this describes?

2 Project goal

This section must state what the project is to generate by way of a result or what is to be delivered by way of the project result (short profile of the product). For details, reference should be made to the specification of the proposed solution and to the solution it describes.

3 Project organization

3.1 Client

This section must specify the envisaged client (possibly also contact persons).

3.2 Project manager

This section must name the designated project manager (with overall responsibility).

3.3 QA manager

This section must name the person who has assumed responsibility for quality assurance in the project (during the Initiation phase).

3.4 Project organization

This section must describe how, in principle, the project is to be organized. It is particularly important, especially with complex forms of cooperation (e.g. business associates, departments, external firms, etc., involved in the project), that the project organization and, consequently, the associated responsibilities are defined as early and unambiguously as possible.



Example

Checklist



Example

Checklist



Example

Checklist



Checklist

4 Framework for effort

This section must specify the approximate effort for the solution envisaged in the specification for the proposed solution. The total effort must be sufficiently detailed with reference to the proposed solution.



Checklist

5 Personnel requirements framework

5.1 Qualification

This section must specify the qualifications which the personnel must have (e.g. in the form of a knowledge matrix).

5.2 Histogram of manpower

This section must describe how the manpower is to be distributed over the entire project.

6 Framework for deadlines



Checklist

6.1 Start of project

This section must state when the project could start.

6.2 Duration of project

This section must state the expected duration of the project.

6.3 Completion / delivery dates

This section must specify the completion and delivery dates which are possible from the perspective of the initial preliminary analysis.

7 Constraints



Checklist

7.1 Project type

This section must specify the project type based on PROCON (development project, maintenance project, consultancy project, etc.).

7.2 Processing

This section must specify how the project is to be processed and in accordance with which agreements:

- On the basis of effort or fixed price
- Continuous project execution or on the basis of hours "on demand" at fixed hourly rates
- Is a phased development process desired?
- Will the project be conducted with business associates?
- Will PSE International be involved?

8 Risks

All risks which are already known must be specified in this section. This section must state the problematical requirements (see listing below) which give rise to these risks.

The risks will essentially be internal, though external risks must also be taken into account.

It is also necessary to state the effects which these risks can have on the course of the project, how likely they are to occur and what measures can be taken to limit their occurrence.

8.1 Technical risks

- Can the task be resolved through a technical solution (e.g. can performance values be satisfied)?
- Have the interfaces been adequately defined?
- Do the necessary development environments (HW and SW) already exist?
- Etc.

8.2 Quality risks

- Have the acceptance criteria been adequately defined?
- Can the product be adequately tested? Are there any technical, organizational or deadline risks involved in conducting the test?
- Can the required norms, standards, etc. be complied with?
- Etc.

8.3 Project execution risks

- Are sufficient numbers of personnel available at the correct time?
- Is there sufficient experience (technical, organizational or domain-related) to execute this project within the agreed framework?
- Are coordination problems to be expected (e.g. when carrying out development work at several sites, with subcontractors, etc.)?
- Etc.

8.4 External risks

- Currency fluctuations, customs duties, taxes
- Market situation (competition) difficult to appraise
- Aspects of the customer's environment unknown (e.g. language)
- What risk is involved in the deadlines and quality of deliveries from the client, subcontractors, suppliers, etc.
- Etc.



Example

Checklist

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Back to the result

Example for Preliminary Project Plan (pE1)

1 Introduction

1.1 Purpose of the document

The purpose of this preliminary project plan is to convey a general overview of the course of the planned DataConnect project.

1.2 Validity of the document

The solution to be devised must be explained in detail in the **specification of proposed solution** document.

The personnel envisaged for this can only be pledged if a positive project decision is reached by M4/96.

1.3 Definitions of terms and abbreviations

GG: Division

DataConnect: System for data acquisition, data management and evaluation of projects and orders within a company.

1.4 Relationship with other documents

The basis for the project plan is provided by the description of the required functions as set out in the customer's user requirements specification V1.3.

2 Project goal

The DataConnect system should cover all aspects of commercial, technical and quality-related project and order monitoring, all related aspects of data capture, data maintenance and evaluation, and accessing capabilities. Generally speaking, the DataConnect system should be used as a network application within the customer's company.

Data acquisition, monitoring and evaluation should take place on a common central database and must be possible on both order and project level. The project data should be available, possibly in condensed form, both during and after the project.

The system should be open (i.e. each user having the right to read all data except personal data) and provide a comparable account of the project / order activity for the users. Write access is limited to a small number of users.

Access to the system should be via PC front-end applications. Open interfaces should be provided for customized evaluations.

It is important to emphasize that DataConnect is being developed first and foremost for monitoring and evaluation purposes and not for planning on project and order levels. Nevertheless, minimum solutions are supported in this respect for simple and small-scale projects. The customized planning tools of the individual users should continue to be used as planning instruments for large-scale projects. Interfaces will be supported as far as possible for planning tools.

The question of which database is located in the background should be irrelevant for the DataConnect system.



Back to the checklist

Example



Back to the checklist

Example

3 Project organization

Example

- Client
Mr. Adam Mustermann
SNI GP PB 2PSE QM
Tel.: 0049 89 / 63300 / 12345
Address: Hofmannstraße 3
D-8000 München
E-mail: adam.mustermann@sni.de

Example

- Project manager
Mr. Berthold Benjamin
PSE KB 124
Tel.: GEU / 999
E-mail: berthold.benjamin@siemens.at

- QA manager
Ms. Cäcilie Cibulka
PSE KB 131
Tel.: GEU / 888
E-mail: caecilie.cibulka@siemens.at

Example

- Responsible ORG unit:
Mr. Brauer KB12
GEU / 800
- GG/KB QM:
Mr. Rudischer KB QM
GEU / 111

...

4 Framework for effort

Example

The effort has been arrived at on the basis of the user requirements specification (version V1.3) in an effort estimation meeting of March 17, 1997 (mean value of 3 independent estimates). The total effort will be around 50 MM (170 Mh/MM).



Back to the checklist



Back to the checklist

5 Personnel requirements framework

- Qualification

Example

Project DataConnect Knowledge matrix	Project planning	Data model	SQL programming	ORACLE-ADMIN	U...User E...Expert a(#)...training to user e(#)...training to expert Training measures
Mr. Müller	E	U, e(1)	a(on Job)	--	
Ms. Maier	--	a(2)	E	U	
Ms. Huber, possibly external consultant	--	--	--	E	
Mr. Berger	--	--	U	--	
Actual	1*E	1*U	1*E, 1*U	1*E, 1*U	
Required (required by)	1*E (M5/96)	1*E, 2*U (E5/96)	1*E, 2*U (M7/96)	1*E (E8/96)	

Example



Re. knowledge matrix:

- (1) "DB-Design" course, March 23-25, SNI TC, Mch.
- (2) "Data modeling with ERWIN" workshop, April 11-12, DB Support Center, GUD

Example

- Histogram of manpower

DataConnect project Histogram of manpower	M5/96	M6/96	M7/96	M8/96	mm/yy
Mr. Müller	--	--	--	Mr. Müller 60 %	
Ms. Maier	--	--	Ms. Maier 100 %	Ms. Maier 100 %	
Ms. Huber	Ms. Huber 50 %	Ms. Huber 100 %	Ms. Huber 100 %	Ms. Huber 100 %	
Mr. Berger	Mr. Berger 100 %	Mr. Berger 100 %	Mr. Berger 100 %	Mr. Berger 100 %	
Total	1.5 MM	2 MM	3 MM	3.6 MM	

Example

Re. histogram of manpower:

It is also possible to work in man weeks (MW) or man years (MY) depending on the size of the project.

6 Framework for deadlines



Example

- Start of project
The planned personnel will be available for the project from the start of 5/96. The project cannot therefore start before 5/96.
- Duration of the project
Because of the planned project volume and provisional histogram of manpower, a project duration of 13 months can be anticipated.
- Completion / delivery date
Provisional delivery date for release 1 is the start of 5/97.

7 Constraints



Example

- Project type
The project is a development project. stdSEM is envisaged for the development method.
- Processing
The project will be processed in the form of a fixed-price project.

8 Risks



Example

- There is no software requirements specification at the current time. This will be drawn up at the start of the project. The estimation must be performed at a fixed price (including travel and computer costs) without a software requirements specification being available (in order to reduce the level of risk, the contract draft should include a climb-out point after the software requirements specification).
- The development enterprise depends on deliveries from the Antonitsch company (end of March 1996). Delays to this delivery result in delays in delivery times.
- The deadline framework required by the customer is extremely tight. There is no reserve built in.
- The customer wants to agree contractual penalties in the event of late delivery. Up until now, PSE has only offered agreements as per ZRG Circular No. 1/90.
- The experts from department KB 61 are currently involved in other projects. In view of the current crisis in the SIMBA and BONUS projects, only very limited resources can be made available for our project. Our department must therefore build up its own industry-specific (bank) know-how.
- Since the customer's order is not anticipated until the end of November, SNI Munich must provide advance services. The defined climb-out point (worst case - no customer order) is November 30.



Contents

Project Decision Report (pE2)

Purpose

Documenting the decision on implementing the project enterprise.



Document checklist

Content

The decision as to whether to implement the project enterprise must be given in writing and must be sufficiently well reasoned. It is based in general on the other phase results.



WinWord template

Notes

If it is decided not to proceed with the project enterprise, the project should be terminated immediately after the decision has been reached (the report required for the termination can consist of only a few lines in the project decision report).

<p>Activities leading to this result:</p> <ul style="list-style-type: none"> ● <u>pT3 Decision on the project enterprise</u> 	
<p>Follow-up activities (in this phase):</p> <ul style="list-style-type: none"> ● (None) 	

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Table of Contents for Project Decision Report (pE2)


Back to the
result

[Enterprise designation](#)
[Date of decision meeting](#)
[Participants at decision meeting](#)
[Documents available](#)
[Result of the decision meeting](#)
[Reasons](#)
[Signatures](#)

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*



Back to the result

Checklist for Project Decision Report (pE2)

Checklist **Enterprise designation**

<enterprise>

Date of decision meeting

<date>

Checklist **Participants at decision meeting**

Example

Name:	Function:	Department:	Location:

Checklist **Documents available**

Specification of proposed solution	available <i>or</i> not available
Preliminary QA plan	available <i>or</i> not available
Preliminary project plan	available <i>or</i> not available

Checklist **Result of the decision meeting**

The enterprise will be executed as a project.
or
 The enterprise will be executed, but not as a project.
or
 The enterprise will not be executed.

Checklist **Reasons**

Example

The precise reasons for the project decision must be specified at this point, including from the perspective of risk.

Checklist **Signatures**

Technical Manager:

Commercial Manager:



Back to the
result

Example of Project Decision Report (pE2)

PROJECT DECISION REPORT

Enterprise designation

Computer-aided timetable creation and manipulation for the Mexican State Railways (Msb)

Date of decision meeting

26.5.1996

Participants at decision meeting

Name: (alph.)	Function:	Department:	Location:
Mr. Maximilian	Business unit manager	PSE AB 1	Vienna/GUD
Mr. Wallner	Railways expert	PSE AB 126	Vienna/GEU
Ms. Winkler	Project manager	PSE AB 123	Vienna/GUD
Mr. Zehetner	Business unit commercial manager	PSE AB K	Vienna/GUD



Back to the
checklist

Documents available

Specification of proposed solution	available
Preliminary QA plan	not available
Preliminary project plan	available

Result of the decision meeting

The enterprise will not be executed.

Reasons

The specifications (deadline and effort frameworks) of the Mexican State Railways cannot be executed safely as a fixed-price project (penalties, see risk analysis in the preliminary project plan).

Signatures

Technical Manager:

(Mr. Maximilian PSE AB 1)

Commercial Manager:

(Mr. Zehetner PSE AB K)



Back to the
checklist



-  Contents
-  Document checklist
-  WinWord template

Preliminary QA Plan (qE1)

Purpose

Support of the project decision from the QA perspective - the most important factor is not to forget any major QA requirements which may involve substantial effort.

Content

The preliminary QA plan must contain all known quality requirements and quality assurance requirements on the part of the client and must state which procedural model is to be used for the project. The resulting consequences must be listed (QA measures required).

The preliminary QA plan must be **checked**.

Notes

Most of the information in the preliminary QA plan will be transferred to the project QA plan when the project is conducted.

The results of the risk analysis (pT1) could well be accommodated in a preliminary QA plan in terms of their content, but should be documented in the preliminary project plan (pE1) in stdSEM in order to emphasize their importance for all areas of project management.

Activities leading to this result: <ul style="list-style-type: none"> ● <u>qT1 Analysis of QA requirements</u> 	
Follow-up activities (in the phase): <ul style="list-style-type: none"> ● <u>pT3 Decision on the project enterprise</u> 	



Table of Contents for Preliminary QA Plan (qE1)


Back to the
result

1. Introduction
 - 1.1 Purpose of the document
 - 1.2 Validity of the document
 - 1.3 Definitions of terms and abbreviations
 - 1.4 Relationship with other documents
2. Process model
3. Quality requirements of the client
4. Quality assurance requirements of the client
5. Quality assurance measures required

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*



Back to the
result

Checklist for Preliminary QA Plan (qE1)

1 Introduction

1.1 Purpose of the document

The preliminary QA plan summarizes all the known Q requirements and QA requirements of the client, defines the process model which is to be used for the project which is to be initiated, and uses this information to derive all necessary QA measures (documents to be drawn up, type and scope of reviews, tests, etc.) which need to be planned in greater detail. This will provide a basis for a preliminary estimation of the effort involved.

Formulation proposal:

The purpose of this preliminary QA plan is to summarize the Q and QA requirements specified for project <xyz> and to define the process model which is to be applied to the project. The QA measures which the plan shows to be necessary are outlined below.

1.2 Validity of the document

The document is essentially limited in scope to the initiation phase, with the QA information known up until that point, and is used in conjunction with the proposed solution and preliminary project plan as a basis for the project decision report.

1.3 Definitions of terms and abbreviations

Where necessary, this section must be used to define all important terms and abbreviations occurring in this document. These include, first and foremost, terms which have different meanings at the PSE to those used by the client.



Example

Example:

Q	<i>Quality</i>
QA	<i>Quality Assurance</i>

1.4 Relationship with other documents

How is this document related to other internal and external documents?

Examples of interesting references to internal documents:

- Project organization (preliminary project plan)
- Additional QA requirements (e.g. for a superordinate project or the business unit; QA process manual, QA manual)

Examples of references to important external documents:

- Documents relating to calls for tender
- Standards to be complied with
- Other QA requirements of the client (e.g. any QA process manual or QA manual which is available).

2 Process model

This section must be used to enter the process model which is to be used for the project. If the client does not request a specific process model, an existing instance of SEM must be selected in every case. No specification is required in case of provision of personnel.



Example

Checklist

Checklist

Checklist

3 Quality requirements of the client



Example

Checklist

Quality requirements are requirements made on the **product** (the result of the project). This section must specify all quality requirements so far known of the envisaged client.

Typical quality requirements include the availability of a program, reliability, time behavior, consumption behavior, maintainability, portability and all aspects relating to user friendliness or usability.

4 Quality assurance requirements of the client



Example

Checklist

QA requirements are requirements made on the **project** (the course of the project). This section must specify all of the client's known requirements which are relevant for handling the project (e.g. from the documentation relating to the call for tender). These must also be examined to determine whether they are critical and risk-related or whether they will have any effect on the effort.

Typical quality assurance requirements include:

- Attaining a specific test coverage
- Conducting official safety certification for safety-relevant software (with all the certification obligations this brings with it)
- Requirements relating to code reviews in the form of intensive inspections for specific program sections
- Test records for performing stand-alone tests
- Inclusion of the client into the procedure for reviewing specific documents.

5 Quality assurance measures required



Example

Checklist

This section is intended to summarize the consequences of the process model, the Q requirements and QA requirements: Which QA measures need to be planned and implemented in this project?

At this moment, it is not yet necessary to plan all project QA measures in detail, but rather to produce a list of the necessary measures in order that this can be used as a basis for a preliminary estimation of the effort which these measures will require.

Siemens AG Österreich, Program and Systems Engineering PSE

Contact: [stdSEM Webmaster](#)

Last modified: 07/15/98 16:00

Copyright © Siemens AG Österreich 1997. All rights reserved.



Back to the result

Example of Preliminary QA Plan (qE1)

1 Introduction

1.1 Purpose of the document

This preliminary QA plan summarizes all the Q and QA requirements specified for the BIS project and defines the process model which is to be used. The necessary QA measures resulting from this plan are described in section 5.

1.2 Validity of the document

The preliminary QA plan is valid for the planned revision BIS V1.0. It contains the product requirements made known to Mr. Meister by May 2, 199x.

1.3 Definitions of terms and abbreviations

BIS: Bank Branch Information System

EN ISO 9001: Model for representing the quality assurance system in the Design / Development, Production, Assembly and Customer Service departments

RDBMS: Relational database management system

1.4 Relationship with other documents

The responsibilities are defined in the preliminary project plan.

The legal provisions for payment transactions (e.g. with abroad) apply for all requirements which are not listed explicitly.

2 Process model

The stdSEM process model of PSE will be used for the project.

3 Quality requirements of the client

The primary criteria are the run times for the various functions and the correctness of payment transactions and automatic operation.

The average processing times for manual activities (payment transactions, provision of information, account management) should be reduced considerably from their current levels. The automatic functions are executed outside the bank staff's normal working hours. This period thereby represents a natural run time barrier. The following procedure can be adopted to obtain an adequate criterion for the run time of the automatic functions as a function of the quantity of data to be processed:

Periods involving particularly high work volumes (e.g. monthly, quarterly or annual changes) must be taken as the basis for the anticipated level of data. The anticipated maximum level must be determined for each automatic function. The actual volume of data which needs to be considered is derived from the sum of the maximum levels multiplied by a safety factor of 2.

All data should be managed in a relational database management system (RDBMS) wherever possible. This solution is mandatory for customer and account data.



Back to the checklist

Example



Back to the checklist

Example



Back to the checklist

Example

4 Quality assurance requirements of the client

The client insists on certification to EN ISO 9001, together with the associated documentation requirements and QA documentation.

He explicitly requests:

- Monthly quality reports which correspond to his normal classification scheme (this is not a problem for us, since the quality reports in our department are similar).
- Inspection of test records for stand-alone, integration and system tests.

5 Quality assurance measures required

In addition to all measures resulting from the application of the development method, particular attention must be paid to the test documentation and related efforts (so far we have not drawn up records for stand-alone tests). This gives rise to the following provisional QA-related activities and measures:

- Drawing up of a QA plan, revision of this plan during subsequent project phases
- Monthly quality reports (clarify with QM whether report to client can fully replace our own internal report)
- Reviews of development documents (software requirements specification, project plan, QA plan, system specification, detailed design specification, test plan)
- Estimation of data volume and run time (we require data from the client, a mass test is urgently recommended at the earliest possible date, preferably on a prototype)
- Code review only for a small number of critical program parts (approx. 20%, selection of parts yet to be clarified!)
- Conducting of stand-alone, integration and system tests (type of documentation yet to be clarified!)
- Drawing up of a test report on tests conducted
- Drawing up of an acceptance report
- Project review and drawing up of a project experience report


Back to the
checklist

Example


Back to the
checklist

Example

*Siemens AG Österreich, Program and Systems Engineering PSE
Contact: [stdSEM Webmaster](#)
Last modified: 07/15/98 16:00
Copyright © Siemens AG Österreich 1997. All rights reserved.*