

SATISFY!
PROJECT SUCCESS RIGHT FROM THE START





Satisfy – Engineering Satisfaction!

Fulfilling expectations or even exceeding them is one of the characteristics of a successful company.

However, before expectations can even be fulfilled in software development, they must first be known. Requirements Engineering (RE) lays the important groundwork for this and ensures early on that software really does what it is supposed to do, that it can be used without any problems, and that it actually adds value.

However, capturing technical features once is not all there is to it. Requirements engineering is a holistic design process, which ideally accompanies software development like the proverbial “red thread”.

It is therefore crucial to look at requirements from different perspectives. In combination with our proven methods and our broad experience, our holistic view of the goals and requirements of organizations, end users, and system developers gives you the best possible support for your requirements engineering.

In addition to our large portfolio in the areas of requirements elicitation, analysis, specification, validation, and management, we focus mainly on the integrated design of business & IT, on innovative and user-centered software, as well as on optimized and customized requirements engineering processes (“Lean RE”).

We support both companies that use software (customers) and companies developing software (contractors) through consulting, active execution (outsourcing), coaching, and method transfer.



Fulfilling YOUR requirements is OUR requirement!

Our support for you includes,

- identification of your markets, customers, and end users, as well as their goals, wishes, and needs;
- adaptation of your company and product strategy to new markets, technologies, and opportunities;
- analysis, modeling, and optimization of your business processes;
- customized definition or adaptation of your requirements processes and documents;
- user-centered elicitation and specification of software systems;
- ideas for innovative solutions;
- identification of non-functional requirements and creation of specifications that can be validated.
- ...

Have we piqued your interest? On the next pages you will learn why we are the right partner for you when it comes to requirements engineering.

Best regards

A handwritten signature in black ink that reads "Sebastian Adam". The signature is fluid and cursive.

Dipl.-Inf Sebastian Adam



ALL ABOARD? Holistic Requirements Engineering

Added value
through
innovation

**Customer, User,
Developer**

- the magic triumvirat

Holistic,
but not complex!

What good does investing into new software do if later on people do not like to use it, or if it does not yield the expected benefits? Then again, who is actually expecting what, in which quality, and why?

Our requirements methodology "Satisfy" has been developed exactly for the purpose of providing an answer to such questions! "Satisfy" does so by proceeding in a holistic manner in order to not only give proper consideration to the needs and requirements of the customers, but also to those of the future end users and system developers.

In more concrete terms, "Satisfy" supports the integrated and complete elicitation, analysis, and specification of requirements, taking into account the stakeholders and their goals. This procedure allows the systematic identification, specification, and validation of all relevant requirements (and only those!) with respects to the goals.

One major benefit of "Satisfy" is the early integration of practice-proven User Experience and creativity methods, which are important, in particular, for generating positive perception among end users or for generating competitive advantages. We offer moderated creativity workshops that build on solid techniques known from brainstorming, while also actively taking into account the possibilities offered by novel technologies such as cloud computing, mobile apps, or the Internet of Things. This allows "Satisfy" to help you exploit improvement potentials in your business processes or realize promising products and business models.




BUSINESS & IT

Integrated design to accomplish new goals



Business processes
as the **ANCHOR**



Process performance
makes the
business difference



mobile
Business SOA
CLOUD
BPM

Your company's IT should effectively and efficiently support the business workflows and thus help you to reach new goals. This means that the requirements on software systems must be derived directly from the business context.

With the help of our service-oriented procedure, we will support you in the integrated design of your company and IT landscape. The preparatory analysis and modeling of your business processes helps to understand the As-Is processes, to systematically detect weaknesses, and to identify optimization potential. Based upon these business processes, requirements on supporting IT solutions are then derived in a traceable manner, which results in optimized processes and a competitive edge for you.

In order to achieve this, we particularly stress the comprehensive inclusion of all relevant stakeholders as well as appropriate integration of existing software components. In addition, we perform prioritization at the same time, in order to ensure that the elicitation process remains lean and efficient.

By considering novel concepts and technologies such as business process management (BPM), service-oriented architectures (SOA), cloud computing, and mobile applications, we empower you to get added business value already during requirements engineering.

In this context we will also gladly help you introduce an integrated SOA/ BPM approach and select suitable tools.

For manufacturers of software, we also offer approaches for identifying and defining innovative and value-adding software services for the market.

In addition, we offer you our know-how and our experience in the area of mobile business applications. This allows you to integrate your portable end devices into your business processes in a reasonable manner.



EXCEED THE EXPECTATIONS!

Innovations for user-centered software

Engineering Satisfaction

Creativity
is
Fun

Find innovative solutions for conflicts

Do you want to design software products that exceed your users' expectations in an innovative way?

The solution is called "Engineering Satisfaction"! Good usability and a positive User Experience (UX) are indispensable success factors for software products today. This means that numerous functional and non-functional user expectations need to be addressed in order to provide optimal support for the users' tasks and make everyday work more effective, efficient, and satisfying.

We will support you in getting to know these central user needs early in the development process so that they can be considered during the design of your software products. Our frequently proven methods will guarantee close intertwining of requirements engineering activities and UX activities: User goals and business goals as well as tasks and business processes to be supported are the focus of systematic requirements elicitation and analysis. Current problems experienced by users are analyzed so that they can be addressed in innovative products. Any tensions between business goals and user goals are resolved by means of our well-proven creativity workshops, where innovative solution ideas are developed that lead to a positive experience (such as motivation, fun) when using software products.

"Engineering Satisfaction" – we support you in incorporating innovations into the design of your software products!



LEAN & AGILE?! ...or rather compliant?

Agile
or
traditional

Specifying
- *but only what is necessary*

Documents
- but only quality
documents

Regardless of whether your development is agile or traditional: The complexity of today's software projects demands that requirements be elicited and documented in some form or the other.

But what is the correct level of detail? What scope does a specification need to have? And: what should be described, what even needs to be described, and especially how to describe it?

We will help you to systematically determine the content, scope, and representation of the requirements that are relevant for you by creating requirements documents together with you that will optimally support you in your context. Unnecessarily extensive and hard-to-read specifications as well as missing information and unrealistic expectations will then be a thing of the past.

When it comes to concrete project business, we will actively accompany you in creating requirements documents, regardless of whether you are working in the role of the contractor or the customer. You will benefit from our many years of experience in the elicitation and specification of requirements, and you will get immediate added value in your project.

If desired, we can perform a critical check of your current or past requirements documents (e.g., specification or requirements documents) in terms of adherence to common standards (e.g., IEEE 830) or the use of best practices, and show you, if necessary, how simple measures can be used to increase the quality of such documents significantly. In this context we will choose suitable notations and modeling rules together with you, and then train you in their use.

In order to continue to achieve a long-term increase in the quality and efficiency of your requirements elicitation and specification, we will analyze your team's internal need for information. Based upon what we find, we will create elicitation processes and specification templates that are custom-tailored to these needs. This ensures that only such requirements are elicited and described that are actually needed and can be realized.

With our help, your requirements will become valuable artifacts and will no longer remain challenging documents without any immediate value!



SMALL PIECES INSTEAD OF LARGE BLOCKS...

Your path to an individual RE process

Microinvasive
to customized
RE processes

**Phases-
Practices-
Techniques**
In 3
steps
to a good
RE
process

Best-practice building
blocks
**instead of
standard processes**

Have you bought a reference book on requirements and are now faced with the challenge of having to make a plan for improving your RE? Then you are not the only one in this situation. We are here to help and will not leave you out in the rain.

If you want to sustainably and systematically improve your requirements management process, you will always run into obstacles and challenges that are hard to master. The reasons for this are numerous and range from the company's agility, which is usually felt to be high (and which people are also reluctant to give up) via limited financial and time resources to low acceptance due to sparse concrete recommendations, missing transparency, or simply a lack of implementation experience. Therefore, it happens quite frequently that a company will contract process consultants or researchers from the area of requirements engineering to assess its own company-specific RE capabilities and ask them to offer improvement suggestions. But can any external consultant really assess your situation efficiently and effectively?

Go ahead and trust your own experiences, made in your own company! We will discuss with you in a workshop lasting just one day how you can take small, but effective steps towards better requirements engineering using selected building blocks and your existing conditions.

With our proven and recognized ReqMan framework we will help you in just a few hours to reliably assess the maturity of your requirements process yourself and to initiate promising improvement measures. With ReqMan, your RE process will ultimately become a controllable work horse instead of remaining a monster that swallows time and money!



Flexible Routine

Whatever we do, we always take into account your situation. Every company works differently, values different aspects, and thus deserves flexible adaptation of our services. In particular, we offer our services not only to software-developing companies (contractors), but also to software-using companies (customers).

We will pick and choose from the following services to offer you a combined package that is optimal for your context:

Business Process Analysis and Modeling

In order to be able to develop modern information systems, knowledge about the business processes in which they are to be used is indispensable. Regardless of whether these are your own business processes or those of your customers: We support your company in the systematic analysis, modeling, and needs-based optimization of business processes.

Integrated Business Process and Requirements Management

Novel paradigms that have emerged in the last few years, such as SOA or BPM, have led to a new dimension in the intertwining between business and IT. We help you establish integrated business process and requirements management in order to allow you to optimally map your internal business processes to information systems.

Goal-oriented Creativity Workshops

Regardless of whether the goal is a new software product or innovative improvement of business processes: We use a portfolio of well-established creativity techniques to help you create novel and, especially, good solution ideas.

Quality Requirements

With our proven procedure for the complete elicitation and specification of non-functional requirements we contribute to making quality an integrated part of your software.

Reviews of Specifications

We check your requirements documents (e.g., specification / requirements documents) on the basis of applicable standards and best practices and show you possibilities for optimization that can be implemented in practice.

Component-oriented Process Improvement

With our proven and recognized ReqMan framework we will help you in just a few hours to reliably assess the maturity of your requirements processes and to initiate promising improvement measures.

Training

No matter which requirements management topic you are interested in: We will be glad to train you – both out-of-the-box and individually! Our classic training with immediate added value is the training on "Task-oriented Requirements Specification".

Perspective-based Requirements Processes and Documents

Every context is different and so are the demands of the requirements process. We analyze your constraints and information needs and derive from these a procedure perfectly tailored to your needs.

Integrated Requirements Processes

We consider requirements management an integrative discipline. With our well-established approach "Satisfy" we ensure that requirements are determined in an integrated, systematic fashion, starting with the higher-level business goals you are trying to accomplish with a specific piece of software.

Stakeholder and Goal Analysis

Do you really know all stakeholders? We find out who else has something to say in a project and include these people. This is the only way to get a consistent picture of the goals to be achieved.

"Informed" Requirements Elicitation

We know the impact of existing solutions and architectures on new requirements. We will therefore help your requirements engineers to explicitly take this knowledge into account during elicitation and negotiation.

UML, EPK, BPMN, Use Cases, ...

We are very familiar with the common notations for the specification and modeling of information systems. We will gladly transfer this knowledge to you.

Objectivized Prioritization

We place the prioritization of your requirements on an objective basis. This allows selecting requirements based not just upon some gut feeling, but rather in terms of their actual benefit.

Traceability

Requirements do not fall from the sky, but result from a goal, a regulation, or a standard. We help you to systematically relate requirements in order to be able to easily trace the impact made by changes.



SATISFY SUCCESS STORY

Insiders Technologies

Self-assessment
instead of
external
assessments

Decide upon
improvements
together

"By using ReqMan we managed for the first time to introduce an RE process that is custom-tailored and understandable for everyone."

Michael Ehresmann,
Development Manager,
Insiders Technologies

Sustainability
with low
effort

For small and medium-sized enterprises (SME), requirements engineering (RE) still constitutes a challenge. Either there are not enough sufficiently experienced requirements specialists, or there is skepticism regarding textbook methods, which are often considered to be far from practical reality. Insiders Technologies GmbH in Kaiserslautern, a market and technology leader for intelligent document processing, also spent a long time searching for a helpful and especially workable RE approach. Particularly in terms of transferring large process models, their experience in the past had not been good: too effort-intensive, too abstract was this procedure, which was based on a standard process and derived the respective recommendations for improvements.

In 2006, Insiders Technologies therefore launched a new attempt in collaboration with us to improve their RE processes in the long term. We used the novel approach "ReqMan", which is based on a company's cooperative self-assessment and initially teaches a series of best practices, without making their use mandatory. We focused on discussing individual RE practices and their weaknesses, which were already known to the employees at Insider Technologies and which could be used to derive direct improvement ideas. The employees of Insiders Technologies were thus integrated into the entire process right from the start, identified themselves with the change proposals, and were directly involved in the implementation. Focusing on individual practices, in particular, allowed taking small, goal-oriented steps towards an improved RE process, which quickly had positive effects.

In this way, Insiders Technologies managed to initiate systematic process improvement with just a few workshops and low effort, since the practices were easy to understand for everyone and could be addressed individually depending on necessity.

More specifically, understandability and readability of the requirements were significantly increased at Insiders Technologies with the help of only a few process adjustments, and systematic derivation of tests from requirements was ensured. Ultimately, product quality was thus increased, as since then, more acceptance tests have been successful and failures can be detected early on.



Fraunhofer

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Leadership



Prof. Dr. Dr. h. c.
Dieter Rombach
Executive Director



Prof. Dr.-Ing.
Peter Liggesmeyer
Scientific Director

Software is a part of our lives. Embedded into everyday equipment, into living and working environments or modern means of transportation, countless processors and controllers make our lives simpler, safer, and more pleasant. We help organizations to develop software systems that are reliable in every aspect, and provide empirical proof of the necessary processes, methods, and techniques, emphasizing engineering-style principles such as measurability and transparency.

Fraunhofer IESE is one of the worldwide leading research institutes in the area of software and systems development. A major portion of the products offered by our collaboration partners is defined by software. These products range from automotive and transportation systems via automation and plant engineering, information systems, health care and medical systems to software systems for the public sector. Our solutions allow flexible scaling. This makes us a competent technology partner for organizations of any size – from small companies to major corporations.

Under the leadership of Prof. Dr. Dieter Rombach and Prof. Dr.-Ing. Peter Liggesmeyer, the past decade has seen us making major contributions to strengthening the emerging IT location Kaiserslautern. In the Fraunhofer Information and Communication Technology Group, we are cooperating with other Fraunhofer institutes on developing trend-setting key technologies for the future.

Fraunhofer IESE is one of 60 institutes of the Fraunhofer-Gesellschaft. Together we have a major impact on shaping applied research in Europe and contribute to Germany's competitiveness in international markets.



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INFORMATION SYSTEMS DEVELOPMENT (ISD)

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The division Information Systems Development develops innovative methods and solutions for the development of complex information systems and interactive systems. In order to offer an immediate added value, we apply our methods directly during our customers' product development and/or transfer our methods and solutions to our customers. These include organizations that use software solutions for their business processes, e.g., from the banking and insurance sector or from the domain of medical IT systems, organizations from such areas as public administration and defense, as well as software developing companies (both large corporations and SMEs).

We address challenges arising during development early and continuously with the help of constructive, innovative development approaches and methods, from requirements elicitation via architecture to design. Our strength lies in examining the non-functional (quality) requirements, which are hard to capture and often affect the entire system. Clearly defined software development artifacts with clearly defined levels of abstraction allow focusing on what is really important and interlink with both traditional and agile process models.

Requirements Engineering

We support you with our renowned requirements approach Satisfy, which is tailored to your needs and goals and ensures traceability, integrated usability, and minimal documentation of the necessary requirements decisions.

User Experience for Business Applications

With our proven methods we support you in developing systems that not only support their users, but also allow having a positive User Experience. This has been proven to contribute to the achievement of your business goals.

Architecture-Centric Engineering

With our successful Fraunhofer ACES approach, we support you in defining and evaluating architectures for complex information systems. The iterative, scenario-based process allows you to master the complexity of architecture definition and migration and to make reliable predictions regarding critical features of the system early on.

Variation Management

We support you in establishing, developing, and managing software product lines as well as in analyzing and improving your already existing configuration infrastructure for variation-rich information systems. Our services build upon our successful product line engineering approach PuLSE™ and extends it to support several other variation management approaches.

Business goes Mobile

With our product GoMobile we help you to exactly identify those areas where a mobile app makes sense as support for your business processes. We can also develop a prototype that can be executed on various mobile devices to help you make your decisions.





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