



eGOVERNMENT

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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 dependable in every aspect, and empirically validate 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 methods. 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. Peter Liggesmeyer and Prof. Dieter Rombach, the contributions of Fraunhofer IESE have been a spent major boost the emerging IT hub Kaiserslautern for the past twenty years. 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 68 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.





eGOVERNMENT SOLUTIONS FOR PUBLIC SECTOR AND BUSINESS

The public sector with its more than four million employees represents one of the largest “business sectors” in Germany. It has to balance regulatory constraints, economic feasibility, and quality of service for its customers. Whether new IT solutions meet with success depends most of all on how well the public sector, business, government, and IT collaborate.

Whereas during the early years of eGovernment, the citizen as a customer of the public sector was the main focus of developments, recent years have seen a growing shift of this focus towards the interface between the public sector and business. This is where the highest gains in efficiency are expected.

ROI analyses performed prior to implementation projects ensure a project’s return on investment. Using systematic and integrated requirements management and involving all stakeholders early on creates the prerequisites for high acceptance of a system. The adaption of the process model V-Modell® XT to a development organization and support for a standard-compliant process ensure that projects are performed efficiently. Service-oriented, standards-based architectures allow the integration of legacy systems and guarantee reuse and interoperability.

Customer Benefits:

- Needs-oriented and secure software systems
- Implementation of eGovernment strategies on the basis of empirically determined priorities
- Asset protection through future-proof, interoperable technologies
- Transparent design and development decisions

EXAMPLES OF APPLIED RESEARCH MADE BY FRAUNHOFER IESE

The area information system FLOr/p of the Rheinland-Pfalz Ministry for Economic Affairs, Transportation, Agriculture and Viniculture enables the 20,000 farmers in Rheinland-Pfalz to retrieve online the area information needed to apply for agricultural subsidies. Fraunhofer IESE accompanied the development of FLOr/p with quality assuring measures from system design to rollout and coordinated the collaboration with the development partners (esp. BGS Systemplanung AG and WhereGroup GmbH). The focus of the quality assurance was on three areas: system architecture (SAGA conformance, use of interoperable technologies and open standards, avoidance of data redundancy), security (especially guaranteeing BSI basic IT protection), and usability. The consistent focus on benefits and users led to high acceptance of the system. The farmers who are using FLOr/p about one year after the system’s launch already represent 75 percent of the agricultural area applied for.

In order to determine which administrative processes would profit the most from e-Government, Fraunhofer IESE analyzed the **interfaces between businesses and state government agencies in Rheinland-Pfalz**. Using the screening method for G2B potential developed at Fraunhofer IESE, the interactions with the public sector were elicited in companies from the automotive, chemical/minerals, and agricultural sectors and were assessed with regard to their e-Government potential. By matching the potential determined in business with those of the public sector found by the University of Applied Sciences for Public Administration in Mayen, those processes were identified whose e-Government implementation promises substantial savings and gains in efficiency for both the public and the business sector. Further implementation of the benefit- and domain-oriented e-Government strategy pursued in Rheinland-Pfalz can now be based on empirically determined priorities.

COMPETENCIES IN SYSTEMS ENGINEERING

Fraunhofer IESE assists partners from all levels of government and public institutions on their way to becoming a high-performance service provider for business and citizens. It provides advice to the public sector and to businesses on how to optimize their joint business processes, focusing on proving the benefits for the user. Concentrating on selected business sectors allows responding to their specific requirements and bundling online services in a way that is appropriate for each sector. A wide range of services provides support in planning and realizing needs- and future-oriented eGovernment solutions.

ROI Analyses

We use the screening method developed at Fraunhofer IESE to support you in identifying, evaluating, and prioritizing process chains between business and the public sector. Extended ROI analyses permit assessing the return on investment of an IT project. Effort estimates performed prior to development projects provide the basis for deciding whether to develop on one’s own or join a development alliance.

Needs Analyses and Subcontractor Support

How well a system is oriented towards the demands of the user is a decisive prerequisite for how well it will be accepted later on. We support you in eliciting these demands by involving all stakeholders and in formulating the functional and non-functional system requirements. Based on these requirements, we develop bidding documents and provide support during the subcontractor process (esp. in accordance with the UFAB regulation).

Adaptation and Use of the V-Modell® XT

Applying the V-Modell® XT, which was developed with the participation of Fraunhofer IESE, increases the quality of project results while minimizing project costs and risks. We support you in successfully planning and performing projects in accordance with the V-Modell® XT. This also includes the adaptation of the V-Modell® XT to the specifics of your software development organization.

System and Software Architectures

The use of open standards in the context of Service-oriented Architectures (SOA) ensures the interoperability of your systems. We support you in designing and implementing future-oriented architectures and in evaluating and restructuring your existing software architecture. We develop organization-specific concepts for the introduction and operation of SOA.

Security

We support you in designing secure software systems, in checking system security in terms of compliance with BSI basic IT protection, and in planning and checking secure IT infrastructures, e.g., by simulating system attacks.

Usability

Deficiency analyses of your user interfaces based on known usability problems and pilot tests with users from representative user groups permit us to provide a solid empirical assessment of usability. Tests in our “Assisted Living Laboratory” allow us to evaluate the suitability of a given system especially for elderly people.