FACILEX®

Risk-Based Process Safety Solutions and Services
WHAT WE DO

Gateway Consulting Group provides facility information management solutions and services. Since its incorporation in 1991, Gateway has led business process improvement projects that demand engineering expertise and exceptional information technology skills.

**FACILEX®** is a suite of advanced Microsoft® SharePoint® configurations designed by Gateway to automate the business processes recommended in the CCPS Guidelines for Risk-Based Process Safety (RBPS).

The RBPS guidelines take the position that all hazards and risks in an operation or facility are not equal; consequently, apportioning resources in a manner that focuses effort on greater hazards and higher risks is appropriate. Using the same high-intensity practices to manage every hazard is an inefficient use of limited resources. A risk-based approach reduces the potential for assigning an undue amount of resources to managing lower-risk activities, thereby freeing up resources for tasks that address higher-risk activities.
FACILEX® applications help organizations rapidly implement the core functions of an RBSP system:

- Design a process safety management system
- Correct a deficient process safety management system
- Improve process safety management practices

These applications provide a comprehensive framework for all of the elements needed to identify and address safety across a facility’s entire lifecycle, including:

- Display a compliance dashboard, metrics and reports
- Manage risk identification, ranking and aggregation
- Manage documentation and records
- Management of Change (MOC)
- Incident Reporting and Investigation
- Audit and Evaluation
- Corrective Action and Continuous Improvement
- Training

FACILEX® applications can be rapidly deployed to an on-premises SharePoint® farm or subscribed to as a cloud-based service. As part of any consulting engagement to deploy FACILEX® applications, Gateway works with each client to define a suitable deployment specification.

- On-Premises solutions, leveraging an existing SharePoint® infrastructure
- Software as a Service solutions, leveraging the Microsoft® Cloud

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FACILEX® applications represent simple or complex business processes by rendering them into a number of states. The collection and sequence of states is termed the lifecycle. FACILEX® applications utilize different lifecycles depending on the objective of the business process.

The diagram below illustrates a typical permanent Management of Change (MOC) lifecycle. During each state in a lifecycle, participants complete action items. Once all the action items in a state are completed the business object is promoted to the next state through to Close-out.

One of the key strengths of FACILEX® applications is that they are entirely configurable, so a company’s policies, procedures, forms, templates, etc. can be accurately represented in the application. This significantly reduces a user’s learning curve since they are familiar with the process.

Each of the FACILEX® applications contains a baseline configuration of the target business process. Gateway develops these starting points by carefully studying industry guidelines and creating a configuration that leverages the applicable standards.

The screen capture below is an example of a FACILEX® landing page. Using the Navigator, an authorized SharePoint user can access any of the applications and participate in the initiation, completion or review of tasks that are underway in the enterprise.
**FACILEX® Audit Management**

Organizations are constantly involved in various audits. FACILEX® Audit eases the burden of audits by:

- Managing the audit protocols
- Collecting the data during the audits
- Ensuring that the follow-up items are resolved.

Typical Audit Lifecycle:

![Audit Lifecycle Diagram]

Key functionality includes:

- Providing a place to store all the “master” audit protocols or templates
- Associating audits with the proper time frame: daily, weekly, monthly, quarterly, annually, etc. as well as ad hoc audits
- Representing audit protocols using technology appropriate to the task: Word® or Excel® checklists, or FACILEX® “Related Items”
- Being able to create or capture follow-up action items and track these items to completion
- Making all the data and risks available for specific and aggregated reporting

**FACILEX® Capital Project**

Many companies have improved their ability to manage capital projects by adopting formal methodologies. Often, these methodologies are based on a phased business process such as the one illustrated in the capital project lifecycle below.

![Capital Project Lifecycle Diagram]

This type of capital project procedure can be easily configured in FACILEX® to automate the process of managing the capital project.

Key functionality includes:

- Ability to configure the project lifecycle to match the project management methodology
- Ability to configure multiple lifecycles to accommodate everything from very small projects, to very large projects
- Links to other FACILEX® objects, like MOCs, PHAs, PSSRs, etc.
- Action item tracking
- Integration with Microsoft Project, Microsoft Office and Outlook
- Utilization of existing forms and templates
- Rich reporting features for presenting data and trends
FACILEX® Corrective Action

Corrective Action Requests (CARs) are used in certain industries to correct actual deficiencies or anticipate potential deficiencies. CARs tend to be quality or product focused. Corrective actions can be initiated from the following causes:

- Customer complaints
- Internal complaints
- Vendor/supplier deficiencies
- Corporate directives

Typical CAR Lifecycle:

Key functionality includes:

- Very simple CAR reports as well as large, detailed CAR investigations
- Determination of root causes, and perhaps “lessons learned”
- Escalation to the proper approval level depending on the severity of the problem

FACILEX® Issue Management

Organizations often maintain “to do” lists for various purposes. FACILEX® Issues application provides the ability to maintain lists of:

- Ideas and suggestions, i.e. corporate “suggestion box”
- Follow-up items from various applications
- Problems that people have discovered, but for which a solution isn’t yet known
- Ideas for changes, which might be an MOC in the future.

An issue may be addressed by one or more action items that can be created and assigned right within the Issues application. Alternatively, the issues can be addressed by a separate business process such as MOC.

Typical Issue Management Lifecycle:

Key functionality includes:

- Capturing sufficient information about the issue to enable a resolution at some later time
- Classifying the issues by department, facility, intended owner, urgency, etc.
- Configuring the resolution at the proper level of complexity, all the way from the one-step resolution to dozens of steps.
**FACILEX® FUNCTIONAL SAFETY MANAGEMENT (FSM)**

The Functional Safety Management (FSM) tool adds the Safety Instrumented Systems (SIS) design process to the RBPS suite. Now, for the first time in industry, process and functional safety compliance can be achieved on the SharePoint platform.

The singular purpose of the FSM process is to ensure critical SIS projects fully comply with ANSI/ISA 84/IEC 61511:2018 functional safety standards. These measures help to avoid common systematic execution and documentation flaws that many fast-paced SIS designs may never overcome.

During the project’s lifecycle, the FACILEX® FSM tool provides a framework for:

- Walking a team through the extensive range of action items in the FSM and SIS lifecycles
- Analyzing a facility’s SIS design and other forms of safety protection
- Enforcing critical task accountability of both process and SIS design disciplines
- Optimizing scheduling by minimizing redundant tasks and design deficiencies
- Managing the key records required for OSHA PSM compliance and RAGAGEP

The diagram above shows the Functional Safety Management business process rendered into a lifecycle. During each state in a lifecycle, participants complete action items. Once all the action items in a state are completed the business object is promoted to the next state onward to completion.

* Developed through joint effort with SIS SILverstone, LLC.
FACILEX® Incident Reporting

A key consideration with Incident Reporting and Investigation is the collection of data pertaining to incidents such as:

- Engineering or technical items
- Environmental issues
- Equipment damage
- Fires
- Illegal acts
- Injuries and illnesses
- Line strikes
- PSV or control valve discharges
- Regulatory/citation issues
- Reputation issues
- Vehicle incidents
- Weather impacts

Typical Incident Investigation Lifecycle:

Key functionality includes:

- Collecting the data—but only the necessary data—implied by the previous list.
- Objectively assessing the actual severity and the potential severity
- Structuring an investigation, with the level of detail ranging from a simple “one-page” report to a detailed investigation report
- Determining root causes and lessons learned
Management of Change to facilities (commonly “MOC”) is an OSHA Process Safety Management regulatory requirement that applies to US companies managing hazardous materials and/or processes. Gateway’s FACILEX® MOC solution incorporates a complete package of industry best practices and is, by far, the most powerful yet easy-to-use solution on the market.

The MOC process can be decomposed into a number of states. The collection and sequence of states is termed the lifecycle. The essential difference between different kinds of MOC’s (e.g. permanent, temporary, emergency, etc.) is that they have different lifecycles. A lifecycle for a full, permanent MOC is shown below.

Key functionality includes:

- Choice of MOC lifecycles:
  - Permanent, Temporary, Short Form, Emergency, etc.
- Facility structure:
  - Configured facility structure, e.g. areas, units, to permit assigning action items to the proper personnel, and to provide better status reports, by unit.
- Risk ranking:
  - Configured to client’s evaluation criteria integrated with MS Excel or MS Access
- Initiation form attributes:
  - Common, and OSHA-required attributes
  - Client’s additional attributes: text, numeric, date, Boolean
  - Thorough MOC descriptions
- Auto-numbering:
  - MOCs automatically numbered in almost any format, starting at any number the customer specifies
- Scoping checklists:
  - Categorized scoping questions efficiently generate MOC tasks and participants
- Document management:
  - Each MOC has a folder structure for managing all supporting documentation
  - Any folder can contain any number of standard templates or forms
- Related MOCs:
  - Mechanisms for managing parent-child relationships
- Related items:
  - Ability to track data related to MOC i.e. equipment data, PHAs, PSSRs
- Standard reports:
  - Ability to create reports from any configured SharePoint view
  - Tightly integrated with Excel and Access to support rich graphical reporting
FACILEX® Organizational MOC

Organizational Management of Change (OMOC) provides a configuration of the client’s procedures for managing changes to personnel or organizational structure, both of which can lead to increased risk.

- Personnel changes refer to changes to safety critical roles, skills, and people
- Structural changes are changes to safety critical positions, accountability, and critical management programs
- Temporary conditions refer to transitional changes when people take on temporary assignments or as interim structural changes are being made.
- Policy and procedure changes can affect the ability to manage risk during the organizational change.

Managing these changes goes beyond on-boarding processes and involves process and pipeline safety expertise in addition to traditional human resource skills. FACILEX® OMOC provides a framework to manage organizational change.

Typical OMOC Lifecycle:

- Initiation
- Scoping
- Impact Analysis
- Planning
- Approvals
- Implementation
- Verification
- Close-Out

Capabilities and key features include the ability to:

- Initiate a proposed organizational change
- Parent/Child relationships to connect related OMOCs
- Progressive scoping to identify management system risks and impacts
- Layers of Protection (LOPA),
- Conduct a risk assessment of the change
- Process authorization to implement the change
- Assign action items to mitigate the identified risks
- Track and close action items
- Notify stakeholders of the change and the implementation plan
- Verify all the affected documents and systems have been updated
- Document close-out of the change
FACILEX® Pre-Startup Safety Review (PSSR)

Pre-startup Safety Reviews (PSSRs) are required before the start-up of new or modified facilities. In some companies PSSRs are called "Operational Readiness Reviews"; in other companies PSSRs constitute a portion of an Operational Readiness Review. PSSRs may be contained within an MOC or Capital project, or referenced by an MOC or Capital project. Gateway’s FACILEX® PSSR application may be implemented:

- Within a Management of Change (MOC)
- Within a capital project
- As a stand-alone PSSRs application

Typical PSSR Lifecycle:

The FACILEX® PSSR application key features include support for:

- Level of detail: "Long" vs "Short" PSSRs
- Discipline-specific requirements: e.g. requirements for rotating equipment, cyanide hazards, etc.
- Triggering conditions and events: guides selection of the kind of PSSR required

FACILEX® Process Hazards Analysis (PHA)

The FACILEX® Process Hazards Analysis (PHA) application begins from an enterprise perspective:

- Regions, Area, Units (using client terminology) are supported
- Equipment lists can be downloaded from common maintenance and asset management systems, like SAP®, Maximo®, and others,
- Equipment can be categorized as “equipment”, “safety systems”, “instrumentation”, “lines”, “wires”, and other categories of the client’s choosing
- Each equipment item can be linked to one or more PHAs
- This permits answering the currently most difficult PHA question, and that is determination of which PHAs a specific equipment item is covered on

Typical PHA Lifecycle:

Common PHA techniques are supported, including checklist analysis, What-if Analysis, What-if/Checklist analysis, HAZOPs, etc. PHAs can be stand-alone items, or linked to MOCs and Capital Projects. Follow-up items are automatically tracked as well.
**FACILEX® Procedure Development**

Gateway has applied its expertise to configure SharePoint for Procedure Development. Gateway can rapidly configure an organization’s procedure and incorporate any process checklists, documents and forms. All of the tasks necessary to conduct a thorough process are generated, assigned and tracked throughout the lifecycle. SharePoint’s best in class document management platform enables secure, enterprise-wide access to the documents, records and data, thereby enhancing corporate knowledge and safety.

Typical Procedure Development Lifecycle:

- **Lifecycle Support**
  - The best practice is to use a lifecycle model (not workflow).
  - Procedure Development lifecycle can be configured to specification,
  - Branding and colors can be configured to specification

- **Powerful, Flexible Initiation Process**
  - Practice Development electronic form in SharePoint
  - Your choice of additional attributes: text, numeric, date, Boolean
  - Thorough tracking of reviewer comments and markups
  - Auto numbering: Procedures are automatically numbered, in almost any format, starting at any number the customer specifies
  - Each Procedure has its own folder structure to store supporting documentation and work-in-process documentation
  - Any folder can contain any number of standard templates or forms

- **Standard Reports**
  - The baseline configuration comes with the several standard reports, each sorted and filtered by an organization’s preferred views.
FACILEX® Risk Watch

Risk Watch is a FACILEX® application that implements the framework for risk based process safety to provide a consistent approach for managing a facilities operational and business risks.

Risk Watch can be deployed as a standalone application to manage risk across the organization. Alternatively, existing FACILEX® applications can be enhanced with a Risk Watch extension for more comprehensive risk analysis capabilities. Risk Watch provides a standard method for initiation and tracking risks through to ultimate mitigation.

Typical Risk Watch Lifecycle:

Key functionality includes:

- Multiple options for categorizing and ranking risks can be configured
  - Type, consequences, probability, detectability, etc.
- Facility structure:
  - Location, line segments, areas, units, etc.
- Initiation form attributes:
  - Title
  - Source
  - Classification
- Auto-numbering:
  - Numbered in almost any format per specification
- Document management:
  - A folder structure for managing all supporting documentation
  - Any folder can contain any number of standard templates or forms
- Related Objects:
  - Mechanisms for managing parent-child relationships
- Standard reports:
  - Ability to create reports from any configured SharePoint view
  - Tightly integrated with Excel and Access to support rich graphical reporting
FACILEX® TRAINING RECORDS (TR)

Organizations have a constant requirement to conduct and track training. The FACILEX® Training Records application provides the capabilities to:

- Manage the training materials
- Manage records associated with training assignment, review and completion
- Ensure that the follow-up items are resolved.

Typical Training Lifecycle:

Key functionality includes:

- Providing a place to store “master” training materials or templates, that are not otherwise managed in a computer-based training environment
- Associating training with the proper time frame: daily, weekly, monthly, quarterly, annually, etc. as well as ad hoc training
- Creation of training plans, and tracking progress to completion
- Representing training materials using technology appropriate to the task: Word® or Excel® checklists, or FACILEX® “Related Items”
- Being able to create or capture follow-up action items and track these items to completion
- Making all the training data available for specific and aggregated reporting
FACILEX® Document Management Accelerators enable Gateway professionals to rapidly configure SharePoint® as an electronic vault for a wide range of content in an asset-based structure. All facilities contain a wide assortment of documents and data:

- Process Safety Information
- Drawings
- Equipment Data Books
- Line Lists
- Operator Logs
- Procedures
- Work Orders
- Instruments
- Departments
- VPP Program

Managing all of this information is challenging, both because of the sheer volume of information, and because each type of document or data requires its own properties and access control, and each has its own use cases and characteristics that must be taken into account. Developing your own system from scratch would be a multi-year endeavor.

Every facility information system rests on a foundation derived from your asset structure. An asset-based organization means that everyone can find important information, because it is directly associated with the relevant asset in the asset structure. People no longer need to search several departmental folders, hoping to find documents and data corresponding to an asset of interest. FACILEX® delivers that foundation, in a packaged SharePoint® configuration.

Key functions include:

- Asset-based organization of your facility, pipeline, or project
- Partitioning of your information across SharePoint site collections and databases
- Support for Areas, Zones, Complexes, Units
- Content types and site columns for standard documents and data
- Information management policies
- Lists, libraries, views, settings
- Asset navigation
CONTACT US

Head Office Address:

Gateway Consulting Group, Inc.
8610 Transit Road, Suite 100,
East Amherst, NY 14051 USA
Phone: (716) 636-0200

Directions from BUF Airport:

East on Genesee St./RT-33 for 1.6 mi.
North on Transit Rd./RT-78 for 4.4 mi
8610 Transit Rd is on the left
Mapquest: http://mapq.st/RUjWjl

Direct sales inquiries to:

Phone: (716) 636-0200 x 4
Email: info@gatewaygroup.com
Web Site: www.gatewaygroup.com