

Fatigue Risk

Risk-based Integrated Fatigue Management

With people's safety at stake, managing risk is an important and necessary part of every workplace. Zurich Risk Engineering, in partnership with InterDynamics, have developed a Fatigue Risk Management System (FRMS) to help our customers manage the risks associated with fatigue.

FAID® | **Quantum**
Fatigue Assessment Tool

Effectively managing the risks associated with fatigue is much more than simply 'stopping work when you're tired'.

Until recently, many organisations have been reluctant to assess the level of fatigue inherent within their operations due to a lack of intervention tools (other than stopping work). However today there are many intervention tools available such as fatigue based scheduling, powernaps, alertness measurement devices, loss investigation and of course, sleep.

The difficulty is putting these interventions/controls onto a risk based framework to effectively manage the risks associated with fatigue.

In response to this, InterDynamics in partnership with Zurich Risk Engineering developed a Fatigue Risk Management System (FRMS) that is essentially an integrated, risk-based solution to Fatigue Management. This solution is an interactive, coordinated process that:

- Determines a Risk Tolerance to either compare with other groups or set as the organisational risk tolerance level
- Sets specific Fatigue Tolerance Levels for selected jobs or tasks
- Uses Fatigue Tolerance Levels to identify appropriate controls/procedures for managing fatigue-related risk and ensuring safe job activity
- Records the agreed controls/procedures so they are available to be used later.

FAID® Quantum - Fatigue Assessment Software

FAID Quantum software is a powerful analytical tool which can help identify fatigue exposures and support the management of hours of work within an organisation's fatigue risk management guidelines.

FAID Quantum software contains two discrete biomathematical models (BMM) to provide a richer overall understanding of fatigue exposures.

The FAID Standard BMM was developed at the Center for Sleep Research, University of South Australia (Dawson/Fletcher). It considers time of day of work and breaks, duration of work and breaks, work history in the preceding 7 days and biological limits on recovery sleep to produce a FAID score.

The FAID Quantum BMM was developed at the Appleton Institute, Central Queensland University (Darwent/Dawson/Roach). It uses the best sleep-wake predictor algorithms that have yet been published in international peer-reviewed literature and analyses the work-rest schedules of your personnel to produce a fatigue score in the Karolinska Sleepiness Scale (KSS).

FAID Quantum also offers the following capabilities:

- Sleep prediction
- Time zone and circadian disruption calculations
- Input of actual sleep-wake data
- Input of external results

Fatigue Hazard Analysis (FHA)

A Fatigue Risk Management System (FRMS) Fatigue Hazard Analysis establishes a bridge between the organisational Fatigue Risk Management Policy and the operational procedures, activities and risk controls. This interactive process supports the development of appropriate controls and protection for tasks exposed to, or vulnerable to, fatigue.

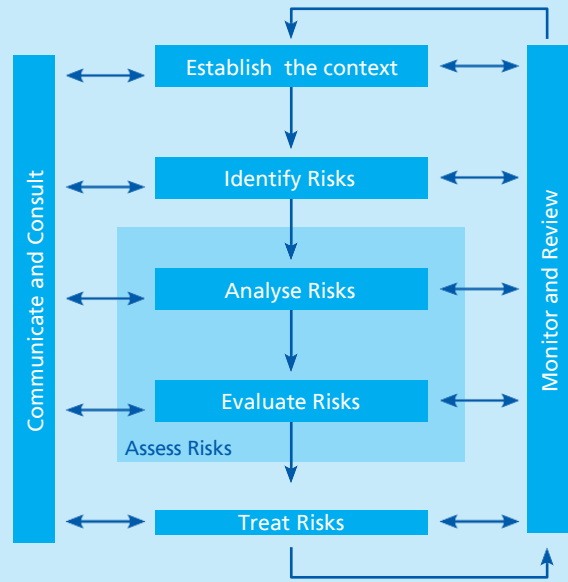
Fatigue Risk Management System (FRMS)

A Fatigue Risk Management System (FRMS) is a framework for Risk-based Integrated Fatigue Management that has been utilised by the transport, mining and health care sectors. A Fatigue Risk Management System (FRMS) includes the following tools:

1. FAID® Quantum – diagnostic software that analyses hours of work and provides an objective fatigue assessment of work patterns
2. HAZAID™ – an interactive, visual tool that standardises the FHA process. HAZAID™ prompts participants to catalogue hazards and assess fatigue-risk associated with their roles and working environment
3. GRAID FRMS™ – an interactive fatigue-related risk grading tool that supports results from the hours of work analysis and risk assessment process. GRAID FRMS™ produces a priority order for implementing the controls designed to manage fatigue-related risk appropriately.
4. GRAID IT™ – an Investigation Tool used to rate the likelihood of fatigue contributing to an occurrence of a specific situation / loss. Upon application of this tool, the likelihood of fatigue contributing to the specific situation / loss is rated from Low to Very High.

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At the core of the Fatigue Risk Management System (FRMS) FHA is the Zurich Hazard Analysis (ZHA) using frameworks of AS / NZS 4360, CAN / CSA-Q850-1997, BS 6079-3:2000.



Major risks for workers are work-related fatigue and consequent changes in alertness, reaction time, hand-eye coordination, communication, decision making.

Fatigue is defined as a dynamic balance between two competing forces. That is, forces producing fatigue and forces reversing the effects of fatigue, that is, recovery.

Information from FAID® can assist in evidencing a Fatigue Tolerance Level for an operation.

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