

Explanation of model parameters

The model accepts multiple types of data. However for ease of understanding, we can divide them into two types

Mandatory data

As the data incorporated into the FRI^{PRO} model is significantly large and comprehensive, the model will automatically insert the appropriate sleep pattern of the average staff around the duties defined at the input.

However, you will have to be mindful of the required fields. The required fields are relatively few. You can find the description of the data along with the mandatory fields in our help centre. You can either see the [Table of Properties](#) tab or the page corresponding to the action you desire to take to learn more.

When connected using one of the API options, the data structure will already be pre-programmed for transmission.

Optional data

Providing data for the mandatory fields is sufficient for normal operations. However, there are other features in FRI^{PRO} that can be used to improve granularity of the consequent analysis when populating the model. Here is a brief overview of those features.

Job workload and job attention

Unlike aircrew models that have [one input for workload](#), shift workers have both job workload and job attention inputs. The FRI range of models apply to many different occupations, so by setting job attention and job workload, the user can use the same model across many occupations.

To understand job workload and job attention, let's look at an example. A person packing boxes may have high job workload but low job attention, whilst a surgeon has the reverse. Job attention is usually critical to healthcare workers and Air Traffic Control Operators.

Rest period

This feature is similar to the [In-duty rest](#) in the aircrew models.

The purpose of this feature is to support operations that require shift workers to complete duties when working on job with high workload and attention.

Rest but not sleep

This feature defines the REST period: not the SLEEP period. FRIPRO will calculate the SLEEP when given the start and finish of the REST period.

The following fields are associated with this feature. You can also read about them in the [Table of Properties](#) tab or the page corresponding to the action you desire to take.

- **First rest start date:** The date within the duty where the first rest period starts.
- **First rest start time:** The time within the duty where the first rest period starts.
- **First rest finish date:** The date within the duty where the first rest period finishes.
- **First rest finish time:** The time within the duty where the first rest period finishes.
- **Second rest start date:** The date within the duty where the second rest period starts.
- **Second rest start time:** The time within the duty where the second rest period starts.
- **Second rest finish date:** The date within the duty where the second rest period finishes.
- **Second rest finish time:** The time within the duty where the second rest period finishes.

Duty type

The Duty type feature has only one function at present, and that is to identify on call duties. All other duties will be set as Active Duties by default.

On call duties are not operational duties. If the shift workers are tired, they will sleep over the start or end of any on call duty. Shift workers are likely to start or continue their normal sleep habits and timing despite being on an on-call duty.

Sleep Class

This setting helps identify the quality of rest that the shift worker achieved. When the shift worker rests on bunk bed, the quality of rest they receive might be better than when they rest on an upright chair. There are currently four options for sleep class.

- Class 1 - Bed
- Class 2 - Reclining seat with back angle > 40 degrees
- Class 3 - Reclining seat with back angle < 40 degrees
- Class 4 - Upright chair

Preparation time and commute time

Similar to [the settings in the aircrew models](#), these two time periods are user-defined although the default is set to 30 minutes for each activity. The administrator may set the default to any other default they wish in the appropriate place in the Administrator screen.

The preparation time and commute timings can be changed for any duty in FRIPRO. The two columns can be individually set for a minimum of 15 minutes with the maximum time constrained by the total of the preparation time plus the commute time.

This maximum for the sum of both events is 5 hours, which allows one event to be set for say, 15 minutes whilst the other can be as high as 4 hours 45 minutes. Similarly, both can be set for 2 hours and 30 minutes each to equal the maximum of 5 hours in total.

Activities

Whilst the overall duty may be too fatiguing, it is possible for the user to look at the activities, determine that the fatigue score at the end of the duty is within the risk envelope and accept the duty as safe to work. However, the user must be vigilant that the staff don't drive home if they are fatigued. A duty of care still exists, and many road accidents occur within 20 minutes from home.

Often when a fatiguing duty is identified, it is interesting and useful to have an overlay on the duty display to show the positioning of each activity within a duty. To tag activities against a schedule, FRMSc allows the user to upload a file containing the activities within the schedule. The following activity types are accepted.



Activity description is free-form field

- Activity description is a free form field. You need not enter the activity code in the description. You can use the field to add your own descriptions of the activity. Many users enter the number of staff members who performed the activity.
- The Code shown below will be used in the display as a shorthand label for the activity.

Activity	Code
Briefing	CHKI
Debriefing	CHKI
Handover	CHKI

Activity	Code
Admin	CHKI
Monitoring	CHKI
Transportation	CHKI
Documentation	CHKI
Inspection	CHKI
Dispatching	CHKI
Maintenance	CHKI
Driving	CHKI
Training	CHKI
Clinical	CHKI
Operations	CHKI
Planning	CHKI
Flight Co-ordination	CHKI
Extraction	CHKI
Medical	CHKI
Office	CHKI