

# BAM Integration Options

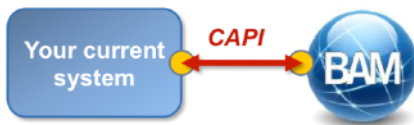
## Alternatives for Integration of the Boeing Alertness Model



The Boeing Alertness Model (BAM) is a high-performance binary, with a validated representation of human physiology, and can be integrated with applications for crew management in various ways. Read about the options below.

### Background

BAM is a compiled binary and does not have a user interface in itself, but will need to be used through an application such as CrewAlert, Concert or Jeppesen Crew Pairing. BAM is accessed over a real-time interface called CAPI; the Common Alertness Prediction Interface. CAPI is the industry standard for connecting crew applications and fatigue models and makes a chain of activities, such as a pairing or a roster, available to a fatigue model. The application receives back predicted alertness, sleep and other SPIs. The different integration options available are described below.



### BAM/TP (TP = Third Party)

BAM is provided for integration into a third party application such as in-house crew tracking systems. Jeppesen is then supplying the following:

- The CAPI specification
- Support for a CAPI implementation done at, and by, the Customer
- A BAM binary compiled for the target architecture
- Support and updates of the BAM binary

Please note that some third-party applications, such as AIMS, already have CAPI built-in and the installation therefore becomes straightforward.

Application usage and visualisation of the predictions to the end user, for example in reports, GUI, decision support and metrics, is for BAM/TP up to each solution provider.



### BAM/DS (DS = Decision Support)

With the Jeppesen Crew Pairing/Rostering/Tracking solutions, BAM is made available together with a plug-in package for using the predictions. This package includes:

- Statistical reports (alertness distribution and metrics such as PA5, AFR, NFR...)
- Alertness graph report
- GUI markers
- Sort/Select/Filter for alertness and AFR
- Parameters controlling the FRM functionality
- Export to ADSF
- Export to CrewAlert Pro

BAM/DS enables planners to become aware of risk, evaluate options, perform analysis and report upon risk metrics.

### BAM/Opt (Opt = Optimization)

For customers with Jeppesen crew planning optimisers, this option also allows for using BAM to guide the optimiser proactively to reduce risk during the optimisation process. The same plug-in package as in BAM/DS is included, as is the following:

- Incentives in the optimiser objective function
- Rules for the optimiser based on alertness levels
- Custom KPIs for the scenario analyser
- Alerts in the alert monitor (JCT only)

This brings the additional benefits of:

- Proactive and automatic reduction of fatigue risk, which shortens the planning process with improved results, avoiding manual re-work
- Tuneable weight to the aspect of fatigue risk
- Identifying weaknesses in rules that allows for high-risk conditions
- Identifying rules that unnecessarily block crew efficiency

### Pricing

BAM usage is priced with a fixed monthly fee, plus a fee dependant on the number of aircrafts. The pricing covers usage for both pilots and cabin crew throughout the entire planning process, and support and upgrades are included.

The Jeppesen part of the implementation is normally straightforward in all three options above. Both implementation and training is priced separately. And again; in addition to the above, BAM is built-in into both CrewAlert and Concert.

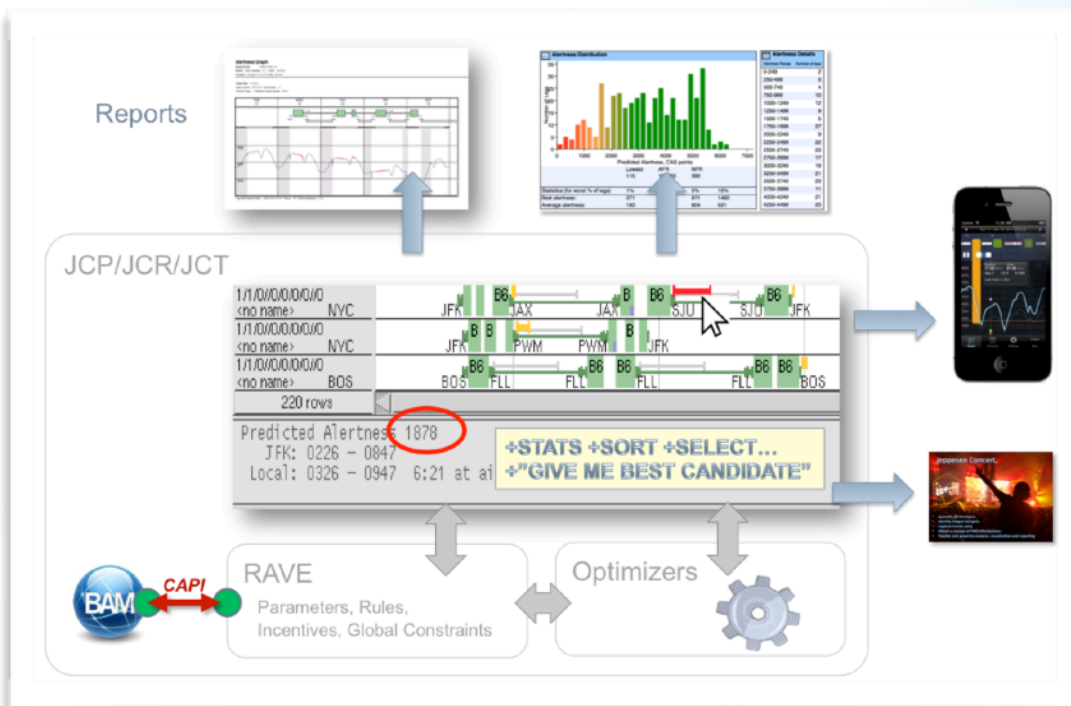
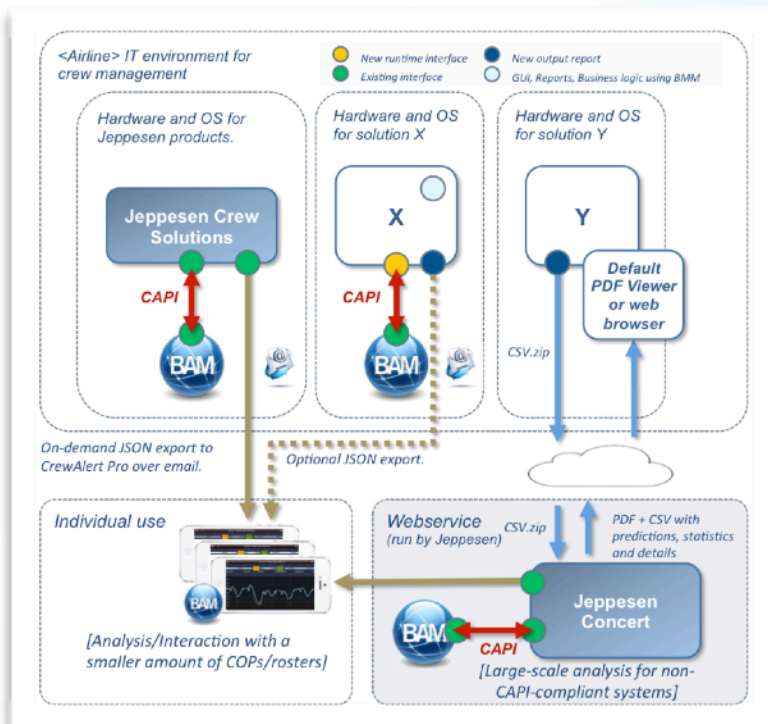


Illustration of functionality made available with BAM/DS and BAM/Opt in Jeppesen Crew Pairing / Rostering / Tracking. (In addition, Alert monitor functionality is provided for Jeppesen Crew Tracking.)



Further integration options (also indirect) to provide access to BAM from crew management applications.

