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AVIATION SOFTWARE

Training Scheduling

Solutions that simplify your work

Training Definition

Training Scheduling has a very rich and comprehensive training definition structure that allows for its modeling to the generally complex airline training curriculum. This is based on a few key concepts outlined below.

Training Resources

Training Resources gives an operator an integrated view of external data captured and referenced within the system to which they may refer when planning or making changes to a training plan. The system allows the operator to create and manage their own resource types, giving them the ability to name resources such as simulators, classrooms, pools, firefighting equipment, etc. Also, with its ability to define more detailed information on such resources as time slots, locations, capacity, and active to and from dates, it allows for the generation of the actual slots to be used for training.

Qualifications

Qualifications are the approvals related to the successful completion of the regulatory requirements that confirm crew members are legal and eligible to operate in relation to those specific requirements. They are divided into two categories:

- Courses – that are the enablers to achieving or maintaining a qualification that requires some form of training session scheduled by the airline, and often having an expiry definition.
- Certifications – being qualifications taken or renewed in the crew's own time, and not as part of the crew's roster. Passports, with their expiry definition, are one example of certification.

Training Programs

Training Programs are the high-level concept that allow an operator to define the actual training programs based on equipment, rank, or department. Examples of training programs are: Cabin Crew Recurrent Training, Instructor Initial Training, B737 Captain Upgrade Training.

Training Footprints

Training Footprints allow an operator to group prerequisites and courses together, providing them a complete picture of all training required while defining the following:

- Any prerequisite(s) to a crew member starting the footprint.
- Sessions required and sequences of activities for completion of training.
- Calculations for cyclic type training (if not integrated to a QMS system that supports cyclic type training).
- The students permitted to hold the footprint.
- Any footprint variants, as required.

Sessions

Sessions are the deliverable components within any training footprint, with courses assigned to sessions, and sessions assigned to selected resource slots. Multiple courses may be assigned to the same session, and multiple sessions to the same resource slot. The number of sessions required to fulfil the course requirements will be configured within the footprint.

These key concepts inter-relate as shown below, a conceptual framework providing the capabilities and flexibility necessary for operators to more simply manage their complex training curriculum.

Conceptual Training Definition Structure
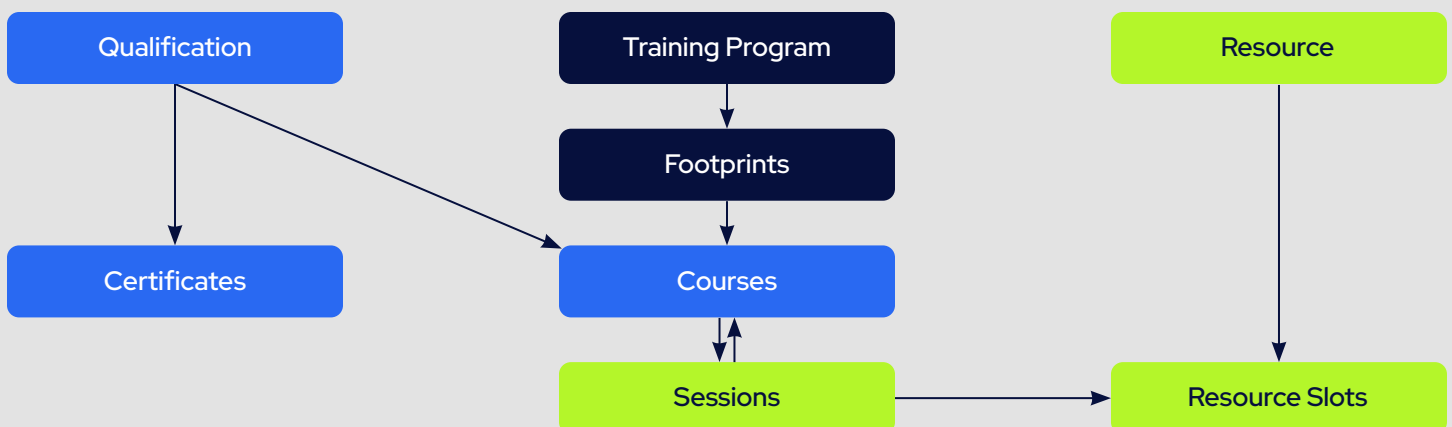
Provides a framework that allows for configuration of complex training curriculum

Training Need Identification

To ensure that no necessary training is missed, Training Scheduling uses crew members' current rank and equipment, coupled with assignments, to create profiles that determine which footprints apply to a crew member at any particular stage in their career. As an example, one crew member's journey through a such profiled pathway might appear as:

B737 First Officer with "737 FO In Training" profile • B737 First Officer • B737 First Officer with "CPT Upgrade" profile • B737 Captain • B737 Captain with added "Ground School Instructor" profile.

As crew move through their career, changing and/or adding rank, equipment, and profiles, this allows the training planner to use Training Scheduling to assess and add, update, or remove associations to certificates and courses, ensuring that only those that are currently required are active. Then, utilizing these correct correlations, the training planners can generate the associated specific training requirements for a specified period which, based on expiry information, determines the crew members and required training courses needed to be completed within that period. These training requirements—essentially instances or iterations of the corresponding standard footprint template—are subsequently assigned to the crew members.

Training Requirement and Assignment

The assignment of training to the students (and the required instructors) is performed using the previously generated Training Requirement. These essentially serve as the template definition of training needed to be performed by the associated students within the specified time.

As part of the assignment process, operators have the capacity to:

• Block and assign students, instructors, and sessions, prior to actual assignment.

• Make copies of the Training Requirement to allow for—
  - creation of subgroups of students for allocation based on maximum class sizes, and / or
  - making specific adjustments to the courses or sessions in the template, for either individual or subset groups of students.

• Provide "Assign Next" functionality to streamline session assignment.

• Assign instructors while assigning sessions, or as a separate specific instructor assignment process.

• View visual representation of the state of completeness of the assignment of the Training Requirement.

• Run validation to ensure the legality of defined training constraints, training rules, and standard regulatory rules, prior to committing the assignment.

Once the Training Requirement assignments are committed, the associated training pairings are automatically generated and allocated on the corresponding crew members schedules.

Gantt Representations

In addition to aid with the assignment process and any subsequent modifications, Training Scheduling contains the following different Gantt representations of the training data:

• Allocation Gantt – View the training information on a crew member's schedule.

• Resource Gantt – View the training information from the defined resources and resource slot perspective.

• Course Gantt – View the training information from a created course perspective.

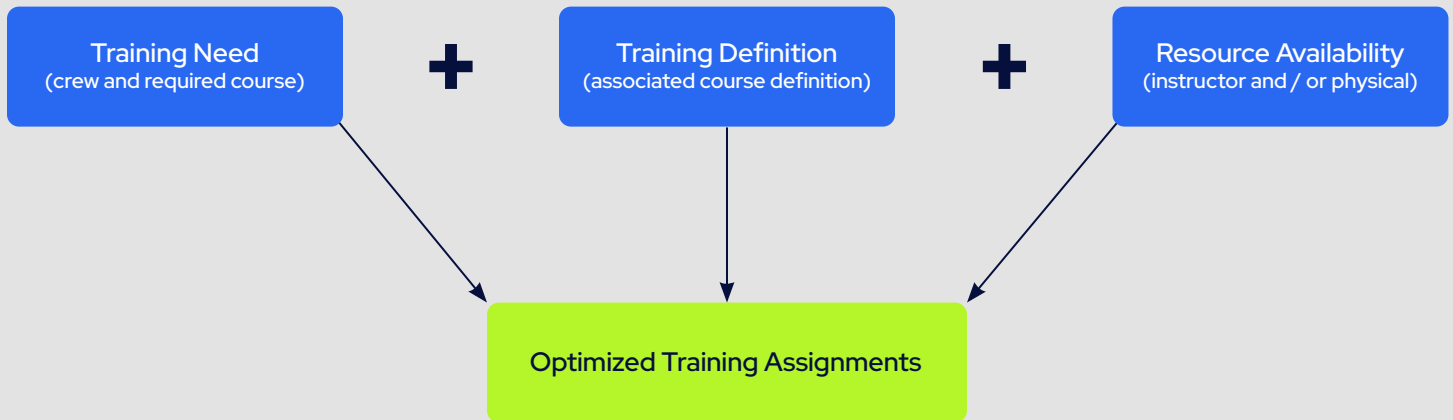**Training Scheduling Assigning Training View**

Training Optimization (Roadmap)

Using the information that resides within Training Scheduling, the system is able to apply techniques to provide assignment efficiency that delivers optimal utilization of training resources. This allows for broad exploration and exploitation of the numerous opportunities provided, by allowing sequencing within training definitions and variable resource availability to provide the holistic, most effective, and efficient outcome across all training activities for the period.

Training Scheduling Optimization

Training Need (crew and required course)	**+**	Training Definition (associated course definition)	**+**	Resource Availability (instructor and / or physical)

Optimized Training Assignments

**Provides holistically effective and efficient training plans**

Advantages of an Integrated Ecosystem

When integrated as part of the overall Pelesys TMDS ecosystem, the value of Training Scheduling is further enhanced, as it becomes the link to ensuring a consistent and accurate training plan and delivery, most essentially by:

- Streamlining data transfer - Removing the need to manually keep training data up-to-date and in sync across multiple systems (including spreadsheets!)

- Reducing risk - Mitigating the possibility of missed or incorrect training via inaccurate, non-timely, or error-prone manual transfer of training data.
- Increasing crew productivity - Through the avoidance of missed or incorrect training, crew are kept qualified and operational, rather than offline awaiting the next training slot.

Conceptual Training Scheduling Integration Flow as part of Pelesys TMDS Ecosystem
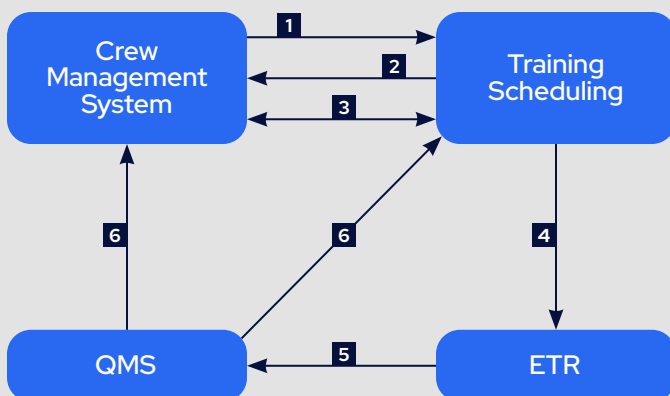
1. Pass pre planned absence, pairings, and flight information
2. Create and update the planned training activities
3. Keep live schedule and training information updated and sync
4. Keep training schedule information updated and in sync to allow the instructors to have the correct papework and activities to train the students
5. Completed training activity information for updated expiry calculation
6. Provide updated Expiry dates

Note: this is a cycle process, the numbering is for explanation purposes only as the processes can begin at any point.

Note: If not all these Pelesys TMDS components are used by the airline, they may explore integrating Training Scheduling with the existing airline system(s) that are used for these components.

Training Scheduling

Training Scheduling is a comprehensive crew training asset that focuses on planning and scheduling training. As a tool with optional optimization and associated automation, its integration provides consistent and accurate related information across the entire training ecosystem.

Planning and scheduling are a complex part of crew training that is often managed by ad hoc tools and manual processes. Leveraging the existing CAE ecosystem—or integrating with your own tools—Training Scheduling simplifies this crucial step in crew management, efficiently connecting the many moving parts required to organize training, and providing consistent and precise information to ensure confidence that the correct training is delivered, accurately and when needed. Additionally, Training Scheduling can produce mid-term training resource projections, manage training programs and resources, and provide visibility to assist recovery from training disruptions. reducing overall training costs and time-consuming effort required to plan training and keep personnel qualified to fly.

Broad Functional Capabilities, Wide-ranging Efficiencies

The benefits of Training Scheduling, from both the broader business perspective and operationally, are as substantial as they are numerous. And while we've called out many of its capabilities in the previous sections, it's well worth an at-a-glance overview of how completely the Training Scheduling solution delivers to both optimize efficiency and elevate productivity across your entire training ecosystem.

Training Scheduling Capabilities:

- Defining training programs and program types, as well as courses and certificates.
- Creating and managing resources (i.e. classrooms, pool, simulator).
- Creating and managing training footprints (curriculum).
- Profile creation and management (job functions).
- Controlling movement between footprints by association.
- Managing rotational training for AQP or EBT.
- Generating and displaying views of required training (Training Requirement) for crew members, including initials, recurrents, upgrades, etc.
- Ability to complete the following in Training Requirements:
    - Assign or remove multiple courses to one resource or many resources.
    - Assign or remove multiple students and instructors.
    - Add and/or remove courses.
    - Change dates and/or times.
    - Split students to modify required training.
    - Clone a training requirement to hold resources without instructors or student names when pre-planning training.
- Visualizing resources, courses, students, and instructors on a Gantt display.

- Planning ground training including non-timed, computer-based training and flying training.
- Planning instructor training, including initial and recurrent training.
- Running rules on planned training.
- Mass-producing training pairings (ground and flight) once planning is complete.
- Providing multiple training-based reports.
- Adding seat support, observation, safety pilots, and supervisory positions within the training requirements.
- Allowing for creation of customized training rules.
- Defining contractual and regulatory rules.
- Able to fully integrate with Pelesys.
- Able to intake SSIM files, handle multiple AOC's, and manage contract instructors.
- API capability to enable third-party integrations (client specific integrations will need to be discussed and scoped as items additional to standard implementation).
- The system follows the same process each month, making it easy for users to understand.

Terminology Definitions

The below outlines the terminology mapping of the Training Scheduling concepts to those of ETR and QMS

Term	Definition	Training Scheduling	QMS	ETR
Program	A program is a collection of footprints that are managed as a group	Program	Not existent	Not existent
Footprint	A footprint is the grouping of training required to be qualified in a job function	Footprint	Qualification	Curriculum
Profile	A profile is way to group employees who required the same training	Profile/Group	Job/Role	Not existent
Training requirement	A training requirement is the training course(s) that are required to complete in a period time	Training requirement	Not existent	Training course
Course	A course is the activity which can be linked to the expiry. Courses are contained inside of the footprints. The course does not have to have an expiry, for example, one-time activities. A course can tell us where training is happening	Course	Certificate	Template
Certificate	Certifications are qualifications that are taken or renewed in the crew's own time. Taking or renewing a certification will not be part of the crew's roster. Examples of a cerification are passports.	Certifcate	Certificate	Assessment
Expiry	An expiry is a condition or circumstance that must be complied with. An expiry is an attribute at each level. Each level could have an expiry and a minimum and/or maximum number of students and instructors.	Expiry	Expiry	Expiry
Student	Anyone that is requiring training	Student	User	Trainee
Instructor	Anyone deliverying teh training	Instructor	User	Instructor
Seat support	A person acting as a seet filler to allow training to continue	Seat support	User	Trainee
Student instructor	An instructor that is in training to become qualified in instructor role	Student instructor	User	Instructor

Contact us

Suite 125-13500 Maycrest Way, Richmond, BC Canada, V6V 2N8
+1 604 233 6268 ext 328 - pelesys-sales@cae.com
www.cae.com/civil-aviation/aviation-software/cae-pelesys/

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