

DATED INSERT DATE

SOFTWARE LICENCE AND SERVICES AGREEMENT

between

APM TECHNOLOGIES SA

and

INSERT AIRLINE NAME

INSERT AIRLINE LOGO

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THIS LICENCE is dated **INSERT DATE**

PARTIES

- (1) **APM TECHNOLOGIES SA** incorporated and registered in Switzerland and whose principal place of business is at Voie des Traz 20, PO Box 1100, 1211 Geneva 5, Switzerland (**APM**).
- (2) **AIRLINE NAME** incorporated and registered in **COUNTRY** whose principal place of business is at **INSERT Address** (**Customer**).

BACKGROUND

WHEREAS APM has developed and owns an integrated package of airline software modules and is engaged in the business of providing software service and product solutions to aviation customers.

WHEREAS the Customer is engaged in the business of aviation and wishes to license certain such software modules and purchase support services from APM for its own use as described in this Agreement.

AGREED TERMS

1. INTERPRETATION

- 1.1 The definitions and rules of interpretation in this clause apply in this licence.

Affiliate: includes any business entity from time to time controlling, controlled by, or under common control with, either party.

CVSS ranking: a ranking from 1 (least serious) to 10 (most serious) based upon the Common Vulnerability Scoring System which is used to assess the severity of vulnerabilities in computing systems.

Software Fee(s): the fee(s) payable by the Customer to APM as set forth at [Schedule 4](#).

Interface and Development Customisation Fee(s): the fee(s) payable by the Customer to APM as set forth at [Schedule 5](#).

Installation date: software delivery date in the test environment, scheduled for **INSERT DATE**.

Installation Fee(s): the fee(s) payable by the Customer to APM as set forth at [Schedule 6](#).

Intellectual Property Rights: all patents, copyrights, design rights, trade marks, service marks, trade secrets, know-how, database rights and all other rights in the nature of intellectual property rights (whether registered or unregistered) and all applications for the same, anywhere in the world.

GDPR means the General Data Protection Regulation (Regulation (EU) 2016/679).

Maintenance Release: a release of the Software that corrects faults (a **patch**), adds functionality or otherwise amends or upgrades the Software, but which does not constitute a New Version and for which no Additional Fee will be charged.

Modification: an optional additional or alternative version of or addition to a module (excluding Patches) for which an additional Fee may be payable.

New Version: any new version of the Software which from time to time is publicly marketed and offered for purchase by APM in the course of its normal business, being a version which contains such significant differences from the previous versions as to be generally accepted in the marketplace as constituting a new product. No additional rental fees will be levied by APM to AIRLINE NAME for a new version, where the version upgrades and replaces the Software as defined in [Schedule 1](#). Any enhancements of the new version will be applicable to a Change Request and Development fees when the enhancement is specified by Air Tahiti.

Personal Data means any information relating to a Data Subject.

Purged Database means a database maintained by the APM on behalf of the Customer (Controller) which has been purged of all Personal and Sensitive Data by the Customer before transferring data with a secure transfer method process to APM.

Site: the premises from which the Customer carries out its business as stated above or as notified to APM in writing from time to time.

Software: the computer programs and apps listed in [Schedule 1](#) and any Modification, Maintenance Release or New Version which is acquired by the Customer during the existence of this licence.

Test Environment: a test environment made available to APM by the Customer which accurately mirrors the commercial environment in which a Software module will be deployed including, where applicable, an interface with any third-party software with which the Software will be required to communicate in a live situation.

- 1.2 The headings in this licence do not affect its interpretation. Except where the context otherwise requires, references to clauses and schedules are to clauses and schedules of this licence.
- 1.3 Unless the context otherwise requires:
 - (a) references to APM and the Customer include their permitted successors and assigns;
 - (b) references to statutory provisions include those statutory provisions as amended or re-enacted;
 - (c) references to one gender includes a reference to the other genders; and
 - (d) references to "including" or "includes" shall be deemed to have the words "without limitation" inserted after them.
- 1.4 In the case of conflict or ambiguity between any provision contained in the body of this licence and any provision contained in the schedules, the provision in the body of this licence shall take precedence.
- 1.5 Words in the singular include the plural and those in the plural include the singular.
- 1.6 A **person** includes a natural person, corporate or unincorporated body (whether or not having separate legal personality).
- 1.7 References in this agreement to data protection legislation (**Data Protection Legislation**) are to the EU General Data Protection Regulation (**GDPR**) (as the same may be amended from time to time) to the extent that GDPR is applicable and, in respect of any processing of personal data to which GDPR does not apply, to the equivalent data protection legislation in the jurisdiction(s) concerned.

- 1.8 Technical terms used in this agreement which are not defined elsewhere shall have the meaning normally attributed to them in the aviation and / or IT industries as appropriate.

2. DELIVERY, INSTALLATION AND TRAINING

- 2.1 APM shall install the Software on hardware provided by the Customer on such date(s) as the parties shall agree. APM shall provide the Customer in advance with information concerning the various compatibility requirements that need to be met. However, the actual selection of hardware for use with the Software shall be the sole responsibility of Customer, but the operating language must be set in English for APM to provide support. APM shall not be responsible for any degradation of performance of the Software caused by the Customer's choice to use other than recommended hardware approved for use by APM with the Software. APM reserve the right to amend the specification of the required hardware in line with technology advancements.

The Customer will make available suitable and functioning hardware equipment for the APM Software modules to run on for both a Live Production and Test environment. The current APM recommended specification of this hardware equipment is set out in [Schedule 9](#) which will be updated from time to time to ensure it meets the requirements of the APM system.

- 2.2 The Customer will house the physical server to deploy the Software within the main domain network of **AIRLINE NAME** in **LOCATION NAME**, to ensure maximum performance is maintained, (with the exception of the web server placed in a DMZ) with secure access to the environment housing the Software in accordance with good IT standards.
- 2.3 The Customer will ensure their Information Technology network between where the physical server is deployed and any end users is of sufficient bandwidth to ensure maximum performance is maintained.
- 2.4 The Customer will provide to APM the Public IP addresses, URL addresses and SSL Certificates for any server housing APM apps when APM server software for the apps or browser moules are rented by the Customer.
- 2.5 The Customer will ensure that all third-party licences required for the database, operating system, third party software including Azure Virtual Desktop or equivalent, Desktop Virtualisation Software such as Citrix or Remote Desktop Services and communication systems to run the Software are purchased and supported by the Customer prior to the installation of the

Software Live Production and Test environment. The Customer will ensure all third-party licences are kept up to date with a currently supported version including the latest release of any security patch made available in the last 60 days. In the event of any disruption of any third-party licences it will be the Customers responsibility to restart and check any APM Services.

The Customer will provide APM with an IATA/SITA/Arinc address for Type B message transmission at the Customer's expense.

The Customer acknowledges that any IATA formatted message extracted from the APM database is without encryption and the Customer is responsible for the level of encryption applied by any third-party transmission provider such as Email, SITA and Arinc.

The Customer will select and provide at their expense up to date Anti-Virus Software on the live and test database and any services server. APM shall not be responsible for the performance of the Anti-Virus Software.

- 2.6 The Customer will provide adequate access, free of charge, for APM personnel at the Customer's premises in order for APM to deliver its services.
- 2.7 The Customer must ensure that APM have access to the Customer's systems in order that APM can retrieve database copies to carry out the agreed support services. In order to allow APM staff to maintain the system remotely, the Customer will supply an open port for in/outgoing across Internet. APM will provide Team Viewer client software to encrypt data flow between the Customer and APM. The Customer will initialise this connection as and when reasonably required by APM, the cost of which shall be borne by Customer. In the event the Customer does not provide to APM either Team Viewer or an acceptable Point to Site VPN alternative with four simultaneous nominative access to the environment and APM will provide the APM Geneva IP address to enable this, then, APM will be relieved of any maintenance obligations specified in this agreement until such remote access is provided. For the avoidance of doubt the monthly service fees as set forth at [Schedule 4](#) and [Schedule 5](#) shall remain payable during any period during which APM is unable to provide the agreed maintenance services due to the Customer failing to provide the necessary connectivity as set forth in this clause 2.7.
- 2.8 The Customer is responsible for servicing and maintaining the database engine, operating system, third party software and communication systems data feeds and for maintaining an appropriate backup and disaster recovery routine at their own expense. If the Customer uses Oracle and has contracted the APM Synchronised database, the Customer must ensure the Oracle

License permits them to provide access to more than one organisation for data transmission to a third party.

2.9 The Customer must inform APM in writing as soon as reasonably possible of any modifications or upgrades made by the Customer to the hardware, operating system, system configuration, database engine or any relevant third-party software and the Customer acknowledges and agrees that no APM Patch or Upgrade will occur at the same time the Customer is upgrading or amending their hardware and network infrastructure.

2.10 The Customer must provide a minimum of one suitably qualified system administrator at all times to administer and operate the system, and perform all system administration and IT security control operations including:

- application administration (diagnose and remedy basic application errors, not requiring advanced technical support from APM).
- user account administration (creation, modification, deletion and monitoring of account use).
- performance of system back up and restoration operations including archiving of APM application data.
- if an Interbase or Firebird database is used the Customer must apply a back up and restore on the live database every week.
- security administration (including password administration, file permissions, monitoring system access, applying security patches).
- data feed and communication line administration (including remote, maintenance, VPNs, hardware configuration and alignment, where appropriate, and support of product-related software configuration including but not limited to Sita (IATA) addresses and ACARS).
- installation of agreed upon third party software and mail server and updates to the same, such as operating systems and facsimile software.
- provide assistance to APM for the delivery of any APM Software Maintenance release or Upgrade.

- any updated release delivered by APM for desktop user versions (2T modules) must be distributed to all users by the Customer.
 - the Customer will ensure that any APM Two Tier Delphi Products will be located in a segregated environment and accessible only via a VPN, SSH or SSL or equivalent cypher level and will not be exposed directly to the public internet.
 - management and monitoring of system resources including system disk space use.
 - network administration.
 - printer administration.
- 2.11 The Customer is responsible for the manual update of local time zones including daylight saving times. APM will supply twice a year an update to a time zone file to assist this process but the ultimate responsibility of time zone updates within the system remains with the Customer.
- 2.12 The Customer is responsible for ensuring that any database copies provided to APM for maintenance purposes are duly purged and anonymised prior to the database being transferred to APM to ensure that the Customer and APM both meet GDPR data protection legislation. A database copy should be considered as 'duly purged and sanitised' for the purpose of this clause 2.13, if the copy provided to APM is free of all personal, sensitive and confidential data which is not strictly required for the purpose for which it is provided.
- 2.13 If the Customer requires assistance to purge any data from a copy database to comply with data protection legislation, APM will assist the Customer with such maintenance. In the event that APM provides the Customer with a software solution to assist the Customer in purging personal data from a database prior to transfer of data to APM, the Customer is solely responsible for ensuring that such software is utilised effectively and APM accepts no responsibility for the transmission of personal data to APM in error by the Customer. In the event that APM identifies that personal data has been transmitted in error, APM shall inform the Customer of this transmission as soon as reasonably possible and follow the reasonable instructions of the Customer for the removal of the personal data and APM will record and charge the time spent to the Customer for the removal of such data at APM's normal hourly rates.

- 2.14 The Customer acknowledges that it is the responsibility of the Customer to comply with any data protection legislation in respect of any system messages, reports or data extracted from the database. In particular the Customer is aware and takes full responsibility for the transfer of any data to comply with the requirements of airport and governmental authorities.
- 2.15 For the avoidance of doubt this Agreement will not override the consent given by any Data Subject prior to using APM's products or App's CrewConnect, OpsConnect or the APMCrewData API in respect of the APM End User Licence Agreement. For the avoidance of doubt this Agreement confirms consent by the Customer for the use and transmission by the Customer of APM's system generated aviation reports, aviation messages or integration to a third party's system as required by the Customer.
- 2.16 Unless explicitly stated otherwise under the wording "*NON STANDARD INTEGRATION POLICY*", all system integrations shall be based on a **push mechanism**. The system that originates or owns a given dataset shall be solely responsible for **pushing** that data to the receiving system(s). No system shall rely on a **pull mechanism** for data retrieval unless such exception has been clearly documented and agreed upon under the aforementioned designation.
- 2.17 The Customer is responsible for the actions of all third-party suppliers contracted by the Customer who receive or post data from or to APM's database within the Customer's environment or which interface to the Customers technical environments. The Customer acknowledges and accepts full responsibility for the transmission of any Personal Data to or from one of the Customer's third party suppliers. The Customer is responsible for ensuring that they have a signed contract in place with any third party data provider where such data is incorporated into the APM system and the Customer takes full responsibility and liability for any such data processed and displayed within the APM system and should the third party raise any claim on the use of such data either on APM or the Customer, it is the Customer's responsibility to pay all costs or remedial or legal costs with such a claim.
- 2.18 APM will not take database copies or duplicates without the knowledge of the Customer. APM undertakes to store customer's data only in a zipped encrypted form except when using the database for purposes of development in accordance with the specifications defined in Schedule 5, the implementation and as necessary to resolve any reported malfunction. The Customer acknowledges that APM uses a Data storage facility at Geneva Airport and a Disaster Back Up facility at Ilem SA, Chemin des Aulx 14, 1228 Plan-les-Ouates, Switzerland. Additionally, the Customer acknowledges that

APM engages the services of Airline Business Solutions Limited, Suite Number 6, Units 41 and 42, Shrivenham 100 Business Center, Majors Road, Watchfield, Swindon, SN6 8TZ, United Kingdom and DXM Aviation, Meyden, Dubai to provide additional Help Desk facilities and in order for support to be provided a copy of the Customer's database will be provided to Airline Business Solutions Limited or DXM Aviation via a VPN for analysis on an as needed basis. Further the Customer acknowledges that APM engages the services of DBI Services SA, Rue de La Jeunese 2, CH – 2800, Delemont, Switzerland to assist APM with database design and performance.

- 2.19 APM will provide to the Customer software development services to modify the software in accordance with the specifications and Development Fees set forth in [Schedule 7](#). All modifications to the Software including the IPR will be owned by APM and subject to the terms of this Agreement.
- 2.20 APM shall provide the Customer with no less than the training in the use and operation of the Licensed Software described in [Schedule 1](#) APM shall provide all training manuals (or hints within the product) and materials, unless otherwise indicated in [Schedule 6](#). Training may be held at an APM facility or the Customer's location as agreed by the parties. The Customer is responsible for all training related travel and accommodation expenses including internet access. In the event training is provided at the Customer's location, the Customer shall also be responsible for providing an acceptable facility and environment for instruction. Additional training and/or recurrent training may be provided by APM upon Customer's request at APM's then-current fee schedule prices for such training and based upon availability in the APM training schedule.
- 2.21 For the purposes of troubleshooting and system maintenance, APM may from time to time use IT monitoring tools to capture network, security compliance and server performance, after Customer agreement which will not be unreasonably withheld.
- 2.22 APM will not be responsible for performance of the Software caused by the Customer's failure to comply with any of the obligations as defined within this clause 2.
- 2.23 APM use Whapi for App messaging and the Customer acknowledges and accepts the Whapi End User and Privacy Agreements as published on their website from time to time in order for APM to provide WhatsApp messaging. Whapi is owned by Funnelly International SRL, 014155 Sector 1 Bucharest, Romania who use Wasabi Technologies LLC located in the United States for data storage and servers hosted by Hetzner in Germany.

3. SECURITY UPDATE AND DEPENDENCIES

- 3.1 The Customer will ensure that any Mail system provider used by the Customer which feeds messages data to or from the APM system will be MicroSoft Outlook 365 or Google Mail or other of the same standard and will include inherent cypher security level with adequate protection to stop scam and malignant mail.
- 3.2 APM monitors vulnerabilities in its applications and dependencies through vulnerability scans and release tracking. If a vulnerability with a CVSS score greater than or equal to 7 is identified or notified to APM by the Customer , APM undertakes to apply patches or CERT recommendations within 180 days.
- 3.3 APM upon the release of any Updated Version or Maintenance Patch in APM Three Tier Technology will scan the APM technology for any CVSS criticality which is level 7 or above and will apply library updates to eliminate that criticality with the assistance of the Customers IT department during standard office hours before deploying the technology to the Customers test environment.

4. LICENCE, SUPPORT SERVICES AND TERM

- 4.1 In consideration of payment of the Fees by the Customer to APM, APM grants to the Customer a non-exclusive, non-transferable, non-assignable, revocable licence to use the Software at the Site or such other site as APM may agree in writing from time to time for an initial term of five (5) years from the Installation Date, or as solely determined by APM and formally advised to the Customer, unless earlier terminated in accordance with the terms of [clause 13](#), and thereafter the term will be automatically renewed for successive two (2) year periods. Either party may cancel this Agreement upon 180 days written notice prior to the expiration of the initial term or any renewal thereof.
- 4.2 The Effective Date is the date of Contract when signed by both parties.
- 4.3 In relation to scope of use:
 - (a) for the purposes of clause 4.1, use of the Software shall be restricted to use of the Software in object code form for the purpose of processing the Customer's data for the normal business purposes of the Customer (which shall not include allowing the use of the Software by, or for the benefit of, any person other than an employee of the Customer).

- (b) the Customer may not use the Software other than as specified in clause 4.1 and clause 4.3(a) without the prior written consent of APM, and the Customer acknowledges that additional fees may be payable on any change of use approved by APM.
- (c) the Customer may make such backup copies of the Software as may be necessary for its lawful use. The Customer shall record the number and location of all copies of the Software and take steps to prevent unauthorised copying.
- (d) the Customer has no right (and shall not permit any third party) to copy, adapt, reverse engineer, decompile, disassemble, modify, adapt or make error corrections to the Software in whole or in part but to the extent that any reduction of the Software to human readable form is necessary for the purposes of integrating the operation of the Software with the operation of other software or systems used by the Customer. In the event that the Customer does wish to have any part of the Software reduced to human readable form the parties shall review the Customer's requirements and APM is, to the extent reasonably possible, prepared to carry out such actions as are appropriate to meet the Customer's reasonable requirements at a reasonable commercial fee within a reasonable period on behalf of the Customer. In such circumstances the Customer shall request APM to carry out such action and provide such information and shall meet APM's reasonable costs in respect thereof, in which case APM shall use all reasonable endeavours to create the necessary interface to enable the Software to integrate with the operation of such other software or systems used by the Customer as agreed between the parties. In the event that APM is not able, having been given reasonable time to develop a suitable interface or interfaces to enable the Software to integrate with the Customer's software and subject to the Customer meeting its obligations as set forth in this clause 4.2 (d), the parties will discuss in good faith alternative options which may resolve this problem and agree the best way to proceed.
- (e) As part of this Agreement APM will supply the Software Services Support Modules and interfaces as defined in [Schedule 2](#).

4.4 The Customer shall not:

- (a) sub-license, assign or novate the benefit or burden of this licence in whole or in part;
- (b) allow the Software to become the subject of any charge, lien or encumbrance; and

- (c) deal in any other manner with any or all of its rights and obligations under this agreement,

without the prior written consent of APM.

- 4.5 APM may at any time sub-license, assign, novate, charge or deal in any other manner with any or all of its rights and obligations under this licence, provided it gives written notice at least 30 days in advance to the Customer or, where that is not possible due to reasons of confidentiality or otherwise, as soon as reasonably possible.
- 4.6 Each party confirms it is acting on its own behalf and not for the benefit of any other person.
- 4.7 Notwithstanding clause 8, a party assigning or considering assigning any or all of its rights under this agreement may disclose to a proposed assignee any information in its possession that relates to this agreement or its subject matter, the negotiations relating to it and the other party which is reasonably necessary to disclose for the purposes of the proposed assignment, provided that no disclosure pursuant to this clause 4.7 shall be made by a party (the **Assignor**) until the proposed assignee has entered into confidentiality provisions with the Assignor sufficient to protect the confidential information of the other party to this agreement. The Assignor shall give notice of the identity of the proposed assignee to the other party as soon as reasonably possible.
- 4.8 The Customer shall:
 - (a) ensure that the number of persons using the Module Software with simultaneous connections does not exceed 150 simultaneous connections for a Firebird database and 300 simultaneous connections for an Oracle database;
 - (b) ensure that the number of crew members using the APM CrewConnect Mobile Application Software with simultaneous connections does not exceed 1500 simultaneous connections.
 - (c) keep a complete and accurate record of the Customer's copying and disclosure of the Software and its users, and produce such record to APM on request from time to time;
 - (d) notify APM as soon as it becomes aware of any unauthorized use of the Software by any person;
 - (e) pay, for broadening the scope of the licences granted under this licence to cover any unauthorized use, an amount equal to the fees

which APM would have levied (in accordance with its normal commercial terms then current) had it licensed any such unauthorised use on the date when such use commenced together with interest at the rate provided for in clause 6.8, from such date to the date of payment.

- 4.9 The Customer shall permit APM to inspect and have access to any premises (and to the computer equipment located there) at or on which the Software is being kept or used, and have access to any records kept in connection with this licence, for the purposes of ensuring that the Customer is complying with the terms of this licence, provided that APM provides reasonable advance notice to the Customer of such inspections, which shall take place at reasonable times.
- 4.10 APM shall provide support services to the Customer in accordance with the provisions of [Schedule 10](#).

5. MAINTENANCE RELEASES

APM will provide the Customer with all Maintenance Releases generally made available to its customers. APM warrants that no Maintenance Release will adversely affect the existing facilities or functions of the Software.

APM Maintenance Releases will be delivered to the test environment of the Customer by APM following liaison in writing (email will suffice). Once a Maintenance Release is approved by the Customer to be applied to the Production environment the parties will mutually agree a date and APM will update the environment with the assistance of the Customer's IT personnel during standard office hours on that date.

6. FEES

- 6.1 The Customer shall pay to APM the Fees set forth at [Schedule 4](#) based upon the number of aircraft in Customer's fleet for services in conjunction with the Software described in [Schedule 1](#) and Schedule 2.
- 6.2 APM shall invoice the Customer the monthly software, app and integration fees quarterly in advance from the Installation Date or sooner should the Customer operate their fleet prior to this date.
- 6.3 The fees applicable are based upon the number of aircraft in the Customer's fleet size. Aircraft fleet size includes the Customer's own aircraft and also aircraft leased into the Customers control with flights allocated to the aircraft

for periods exceeding five days in any calendar month. APM as part of this agreement have the right to access the Customer's APM database to confirm fleet use.

- 6.4 APM shall invoice the installation, training and development fees set forth at [Schedule 5](#) and [Schedule 6](#) as at the Installation Date.
- 6.5 All sums payable under this licence are exclusive of VAT or any relevant local sales or import taxes, for which the Customer shall be responsible.
- 6.6 The Customer shall reimburse APM for all actual expenses including transportation (the upper-class above economy), 4 star hotel, meal and incidental expenses (a maximum daily per diem of €110) incurred by employees or other representatives of APM in connection with performance of this Agreement if such travel and other expenses are (i) necessary for the performance of services to be provided to Customer hereunder, and (ii) approved in advance by Customer. APM shall invoice the Customer within 90 days after such expenses have been incurred.
- 6.7 All invoices are due within 30 days of the date the invoice is received by the Customer as defined by the date of the email the invoice is sent.
- 6.8 If the Customer fails to pay any amount payable by it under this licence APM may charge the Customer interest on the overdue amount (payable by the Customer immediately on demand) from the due date up to the date of actual payment, after as well as before judgment, at the rate of four % per annum above the base rate for the time being of HSBC plc. Such interest shall accrue on a daily basis and be compounded quarterly. Alternatively, APM may at its sole discretion claim interest under the Late Payment of Commercial Debts (Interest) Act 1998.
- 6.9 The monthly service fees and other prices stated herein will increase by 2% per annum from **INSERT DATE BEING 5 YEARS FROM INSTALLATION** i.e. from the end of the initial term, as defined by clause 4.1.

7. MODIFICATIONS AND NEW VERSIONS

- 7.1 APM shall inform the Customer of any optional Modifications which it makes generally available to its customers and shall offer to license such Modifications to the Customer on the terms on which they are generally made available by APM to its customers. Should the Customer request APM to develop a Modification specifically for the Customer (**Customer Modification Change Request**) and APM is prepared to develop the requested Customer Modification, the terms on which the Customer Modification will be developed

and supplied will be subject to agreement on a case by case basis including any additional fees which shall be payable. Any Customer Modification Change Request shall be subject to the provisions of [clause 11](#). APM shall inform the Customer of any New Versions and shall offer such New Versions to the Customer free of additional fees except where such New Versions include new functions as requested by the Customer and in such case will be on the terms in this Agreement.

- 7.2 New Versions of APM Software will be delivered to the test environment of the Customer by APM following liaison in writing (email will suffice). Once this is approved by the Customer to be applied to the Production environment the parties will mutually agree a date and APM will update the environment with the assistance of the Customer's IT personnel during standard office hours.

8. CONFIDENTIALITY AND PUBLICITY

- 8.1 Each party shall, during the term of this licence and thereafter, keep confidential all, and shall not use for its own purposes (other than implementation of this licence) nor without the prior written consent of the other disclose to any third party (except its professional advisors or as may be required by any law or any legal or regulatory authority) any, information of a confidential nature (including, without limitation, trade secrets and information of commercial value) which may become known to such party from the other party and which relates to the other party or any of its Affiliates, unless that information is public knowledge or already known to such party at the time of disclosure, or subsequently becomes public knowledge other than by breach of this licence, or subsequently comes lawfully into the possession of such party from a third party. Each party shall use its reasonable endeavours to prevent the unauthorised disclosure of any such information.
- 8.2 The terms of this licence are confidential and may not be disclosed by the Customer without the prior written consent of APM, save that a Party may disclose the terms of the Agreement to its professional advisors and / or where legally required to so including for the avoidance of doubt, where required by the rules of any aviation authority with jurisdiction over either of the parties.
- 8.3 APM may, subject to prior written approval by the Customer, reference their commercial relationship by mentioning the name and logo of the Customer, for direct marketing purpose only, including, but not limited to, marketing references on websites, social media and promotional materials. APM will be permitted to ask the Customer to provide a reference to a potential APM customer and such reference will not be unreasonably withheld.

9. EXPORT

- 9.1 Neither party shall export, directly or indirectly, any technical data acquired from the other party under this agreement (or any products, including software, incorporating any such data) in breach of any applicable laws or regulations (**Export Control Laws**), including United States export laws and regulations, to any country for which the government or any agency thereof at the time of export requires an export licence or other governmental approval without first obtaining such licence or approval.
- 9.2 Each party undertakes:
- (a) contractually to oblige any third party to whom it discloses or transfers any such data or products to make an undertaking to it in similar terms to the one set out above; and
 - (b) if requested, to provide the other party with any reasonable assistance, at the reasonable cost of the other party, to enable it to perform any activity required by any competent government or agency in any relevant jurisdiction for the purpose of compliance with any Export Control Laws.

10. APM'S WARRANTIES

- 10.1 APM warrants that it has the right to supply the Software and that the use of the Software by the Customer in accordance with the terms of this agreement will not breach the intellectual property rights of any third party.
- 10.2 APM will deliver any new Software module(s) developed under the terms of this Agreement to the Customer's test environment for testing and validation prior to the module(s) being used in a live commercial environment. In the event that the Customer identifies any errors in or lack of functionality in the test module(s) the Customer shall promptly advise APM of the same and APM shall make any necessary corrections to the test module(s) so that they conform in all material respects with the agreed written specifications. Once the Customer is satisfied that, in its reasonable opinion, the test module(s) meet the agreed specifications it will provide written confirmation of the same to APM ("Acceptance"). APM warrants that the Software will conform in all material respects to any specifications agreed in writing between the parties for a period of 90 days from the Installation Date (**Warranty Period**). If, within the Warranty Period, the Customer notifies APM in writing of any defect or fault in the Software in consequence of which it fails to conform in all material respects to the agreed specifications and such defect or fault does not result from the Customer, or Third Party Supplier of the Customer or anyone acting with the authority of the Customer, having amended the Software or used it

outside the terms of this licence for a purpose or in a context other than the purpose or context for which it was designed or in combination with any other software not provided by APM, or it has not been loaded onto Supplier-specified or suitably configured equipment, APM shall, at APM's option, do one of the following:

- (a) repair the Software;
- (b) replace the Software; or
- (c) terminate this licence immediately by notice in writing to the Customer and refund any of the Fee paid by the Customer as at the date of termination (less a reasonable sum in respect of the Customer's use of the Software to the date of termination) on return of the Software and all copies thereof,

provided the Customer provides all the information that may be necessary to assist APM in resolving the defect or fault, including a documented example of any defect or fault, or sufficient information to enable APM to re-create the defect or fault including the provision of any Third Party data as Contracted by the Customer.

- 10.3 APM warrants that it will provide the training and support services set forth at [Schedule 6](#) and [Schedule 10](#) (as the same may be amended from time to time by the written agreement of the parties) with reasonable care and skill.
- 10.4 APM does not warrant that the use of the Software will be uninterrupted or error-free. However, in case of interruption or error during the use of the Software due to the fault of APM, APM will repair the Software within the time limits as described in [Schedule 10](#) at no cost to the Customer. In the event of interruption or error in the use of the Software which arises as a result of to a fault in the Customer's network or hardware environment, the Customer's VPN, or a fault in a third party network environment or process which is outside the control of APM, APM will use its reasonable efforts to assist the Customer to resolve any such fault if required in order to restore the Software so that it functions in accordance with the agreed specifications. Additional fees may apply in such circumstances and if such, charged by APM to the Customer.
- 10.5 The Customer accepts responsibility for the selection of the Software to achieve its intended results and acknowledges that the Software has not been developed to meet the individual requirements of the Customer.
- 10.6 All other conditions, warranties or other terms which might have effect between the parties or be implied or incorporated into this licence or any

collateral contract, whether by statute, common law or otherwise, are hereby excluded, including without limitation the implied conditions, warranties or other terms as to satisfactory quality, and fitness for purpose.

- 10.7 The Customer acknowledges that all data compiled by the Software is reliant on information from third party data providers as selected by and Contracted by the Customer and the manual input of data by the Customer's personnel. The Customer acknowledges and agrees that APM has no liability for the accuracy of such data or use of such data. As such the accuracy of the data and subsequent dispatch and safety of an aircraft is the full responsibility of the Customer.
- 10.8 The Customer will supply the information defined in [Schedule 3](#) to APM in a timely manner and certainly within 30 days of contract signature in order for APM to complete its obligations.

11. LIMITS OF LIABILITY

- 11.1 Except as expressly stated in clause 11.2:

- (a) APM shall have no liability for any losses or damages which may be suffered by the Customer (or any person claiming under or through the Customer), whether the same are suffered directly or indirectly or are immediate or consequential, and whether the same arise in contract, tort (including negligence) or otherwise howsoever, which fall within any of the following categories either directly or indirectly:
 - (i) special damage even though APM was aware of the circumstances in which such special damage could arise;
 - (ii) loss of profits;
 - (iii) loss of anticipated savings or margin;
 - (iv) loss of business opportunity;
 - (v) wasted management, operational or other time;
 - (vi) loss of goodwill;
 - (vii) loss or corruption of data; except where such corruption or loss was due to integration with FRMS (Safe/Care) when the FRMS option is included in the Integration software detailed in [Schedule 2](#);
 - (viii) loss or corruption of data due to the non-transfer of a message;
 - (ix) loss or corruption of data due to the failure of an integration to or from a third-party system;

- (x) loss of data due to a security breach in the Customer's environments;
- (xi) loss of or damage to aircraft;
- (xii) delay of an aircraft;
- (xiii) grounding of an aircraft;
- (xiv) incorrect crewing of an aircraft;
- (xv) the failure of the integration of the Software with a third party's software where such failure is the responsibility of the third party contracted by the Customer including a change in transmission protocol, a change in data structure, a change in a transmission address, a failure of the third-parties hardware or network environment or a change in the third-party's configurations
- (xvi) liability of the Customer to third parties due to any of the above

provided that this clause 11.1(a) shall not prevent claims for loss of or damage to the Customer's tangible property that fall within the terms of clause 11.1(b) or any other claims for direct financial loss that are not excluded by any of categories (i) to (xii) inclusive of this clause 11.1(a);

- (b) the total liability of APM, whether in contract, tort (including negligence) or otherwise and whether in connection with this licence or any collateral contract, shall in no circumstances exceed a sum equal to the Fees paid to APM during the contract year (calculated with effect from the signature date of this Agreement) during which an event of default arises; and
- (c) the Customer agrees that, in entering into this licence, either it did not rely on any representations (whether written or oral) of any kind or of any person other than those expressly set out in this licence or (if it did rely on any representations, whether written or oral, not expressly set out in this licence) that it shall have no remedy in respect of such representations and (in either case) APM shall have no liability otherwise than in accordance with the express terms of this licence.

11.2 The exclusions in clause 10.6 and clause 11.1 shall apply to the fullest extent permissible at law, but APM does not exclude liability for:

- (a) death or personal injury caused by the negligence of APM, its officers, employees, contractors or agents;
- (b) fraud or fraudulent misrepresentation;

- (c) breach of the obligations implied by section 12 of the Sale of Goods Act 1979 as amended by the Sale and Supply of Goods Act; or
- (d) any other liability which may not be excluded by law.

11.3 All dates supplied by APM for the delivery of the Software or the provision of maintenance services shall be treated as approximate only. APM shall not be liable for any loss or damage arising from any delay in delivery beyond such approximate dates.

11.4 Each Party undertakes to implement all reasonably necessary and appropriate technical and organizational measures using generally accepted and up to date technology to protect any of the other Party's personal or confidential data it processes under the Agreement against unauthorized or accidental access, alteration, transmission, disclosure, deletion or destruction.

11.5 Subject to the provisions of clause 10, APM shall be responsible for any breach of the provisions of this clause 11 for arising from the acts, errors, or omissions of APM, its own agents or its own subcontractors. In these cases, APM shall be responsible for any direct losses, damages, costs (including reasonable legal fees and other expenses) incurred by or awarded against the Customer as a result of or in connection with such breach.

12. INTELLECTUAL PROPERTY RIGHTS

12.1 The Customer acknowledges that all Intellectual Property Rights in the Software and any Modification, Maintenance Releases and New Releases (including Patches) belong and shall belong to APM, and the Customer shall have no rights in or to the Software other than the right to use it in accordance with the terms of this licence.

12.2 APM undertakes at its own expense to defend the Customer or, at its option, settle any claim or action brought against the Customer alleging that the possession, use, development, modification or maintenance of the Software (or any part thereof) in accordance with the terms of this licence infringes the UK Intellectual Property Rights of a third party (**Claim**) and shall be responsible for any reasonable losses, damages, costs (including legal fees) and expenses incurred by or awarded against the Customer as a result of or in connection with any such Claim. For the avoidance of doubt, clause 12.2 shall not apply where the Claim in question is attributable to possession, use, development, modification or maintenance of the Software (or any part thereof) by the Customer other than in accordance with the terms of this licence, use of the Software in combination with any hardware or software not supplied or specified by APM if the infringement would have been avoided by

the use of the Software not so combined, or use of a non-current release of the Software.

12.3 If any third party makes a Claim, or notifies an intention to make a Claim against the Customer, APM's obligations under clause 12.2 are conditional on the Customer:

- (a) as soon as reasonably practicable, giving written notice of the Claim to APM, specifying the nature of the Claim in reasonable detail;
- (b) not making any admission of liability, agreement or compromise in relation to the Claim without the prior written consent of APM (such consent not to be unreasonably conditioned, withheld or delayed);
- (c) giving APM and its professional advisers access at reasonable times (on reasonable prior notice) to its premises and its officers, directors, employees, agents, representatives or advisers, and to any relevant assets, accounts, documents and records within the power or control of the Customer, so as to enable APM and its professional advisers to examine them and to take copies (at APM's expense) for the purpose of assessing the Claim; and
- (d) subject to APM providing security to the Customer to the Customer's reasonable satisfaction against any claim, liability, costs, expenses, damages or losses which may be incurred, taking such action as APM may reasonably request to avoid, dispute, compromise or defend the Claim.

12.4 If any Infringement Claim is made, or in APM's reasonable opinion is likely to be made, against the Customer, APM will at its sole option and expense and so far as is reasonably possible:

- (a) procure for the Customer the right to continue using, developing, modifying or maintaining the Software (or any part thereof) in accordance with the terms of this licence;
- (b) modify the Software so that it ceases to be infringing; or
- (c) replace the Software with non-infringing software.

provided that if APM modifies or replaces the Software, the modified or replacement Software must comply with the warranties contained in clause 10.1 and the Customer shall have the same rights in respect thereof as it would have had under those clauses had the references to the date of this licence been references to the date on which such modification or replacement was made.

- 12.5 This clause 12 constitutes the Customer's exclusive remedy and APM's only liability in respect of Claims and, for the avoidance of doubt, is subject to clause 11.1. APM shall not be liable for any Infringement Claim which arises from any act or omission by the Customer in breach of the terms of this licence.

13. DURATION AND TERMINATION

- 13.1 Without prejudice to any rights that have accrued under this agreement or any of its rights or remedies, either party may at any time terminate this agreement with immediate effect by giving written notice to the other party if:

- (a) the other party fails to pay any amount due under this agreement on the due date for payment and remains in default not less than 14 days after being notified in writing to make such payment;
- (b) the other party commits a material breach of any term of this agreement (other than failure to pay any amounts due under this agreement) and (if such breach is remediable) fails to remedy that breach within a period of 30 days after being notified in writing to do so;
- (c) the other party repeatedly breaches any of the terms of this agreement in such a manner as to reasonably justify the opinion that its conduct is inconsistent with it having the intention or ability to give effect to the terms of this agreement;
- (d) the other party suspends, or threatens to suspend, payment of its debts or is unable to pay its debts as they fall due or admits inability to pay its debts or (being a company) is deemed unable to pay its debts within the meaning of section 123 of the Insolvency Act 1986;
- (e) the other party commences negotiations with all or any class of its creditors with a view to rescheduling any of its debts, or makes a proposal for or enters into any compromise or arrangement with its creditors other than (where a company) for the sole purpose of a scheme for a solvent amalgamation of that other party with one or more other companies or the solvent reconstruction of that other party;
- (f) a petition is filed, a notice is given, a resolution is passed, or an order is made, for or in connection with the winding up of that other party (being a company) other than for the sole purpose of a scheme for a solvent amalgamation of that other party with one or more other companies or the solvent reconstruction of that other party;
- (g) an application is made to court, or an order is made, for the appointment of an administrator or if a notice of intention to appoint

an administrator is given or if an administrator is appointed over the other party (being a company);

- (h) a floating charge holder over the assets of that other party (being a company) has become entitled to appoint or has appointed an administrative receiver;
- (i) a person becomes entitled to appoint a receiver over the assets of the other party or a receiver is appointed over the assets of the other party;
- (j) the other party (being an individual) is the subject of a bankruptcy petition or order;
- (k) a creditor or encumbrancer of the other party attaches or takes possession of, or a distress, execution, sequestration or other such process is levied or enforced on or sued against, the whole or any part of its assets and such attachment or process is not discharged within 14 days;
- (l) any event occurs, or proceeding is taken, with respect to the other party in any jurisdiction to which it is subject that has an effect equivalent or similar to any of the events mentioned in clause 13.1(d) to clause 13.1(j) (inclusive); or
- (m) the other party suspends or ceases, or threatens to suspend or cease, to carry on all or a substantial part of its business.

13.2 In addition to the right of termination set forth at clause 13.1 (a), APM may suspend the licence granted in clause [4.1](#) and the provision of any related services under this Agreement by giving 14 days prior written notice to the Customer in the event of payment not being received from the Customer for any Fee due. APM shall be entitled to continue the suspension of the licence and services until such time as payment of all Fees due has been made by the Customer. For the avoidance of doubt, exercise of the rights set forth in this clause 13.2 shall not prevent APM subsequently exercising its rights under clause 13.1 (a) at any time prior to payment by the Customer of all overdue Fees. Upon payment of past due invoices, APM will reinstate the use of the Licensed software and services, unless formal termination of the Licence has been served in accordance with clause 13.

13.3 Termination by either party in accordance with the rights contained in this clause 13 shall not affect the accrued rights, remedies, obligations or liabilities of the parties existing at termination.

13.4 On termination for any reason:

- (a) all rights granted to the Customer under this licence shall cease;

- (b) the Customer shall cease all activities authorised by this licence;
- (c) the Customer shall immediately pay to APM any sums due to APM under this licence; and
- (d) the Customer shall immediately destroy or return to APM (at APM's option) all copies of the Software then in its possession, custody or control and, in the case of destruction, certify to APM that it has done so.

13.5 Any provision of this agreement which expressly or by implication is intended to come into or continue in force on or after termination of this agreement shall remain in full force and effect.

14. DATA PROTECTION

14.1 For the purposes of this clause 14, the following terms shall have the meaning attributed to it in the Data Protection Legislation: Personal Data, Personal Data Breach.

14.2 Both parties will comply with all applicable requirements of the Data Protection Legislation. This clause 14 is in addition to, and does not relieve, remove or replace, a party's obligations or rights under the Data Protection Legislation.

14.3 Each party shall ensure that it has in place appropriate technical and organisational measures to protect against unauthorised or unlawful processing of Personal Data and against accidental loss or destruction of, or damage to, Personal Data, appropriate to the harm that might result from the unauthorised or unlawful processing or accidental loss, destruction or damage and the nature of the data to be protected, having regard to the state of technological development and the cost of implementing any measures (those measures may include, where appropriate, pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of its systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the technical and organisational measures adopted by it).

14.4 Each party shall ensure that all personnel who have access to and/or process Personal Data are obliged to keep the Personal Data confidential.

- 14.5 Neither party shall transfer any Personal Data outside of the European Economic Area save in accordance with the terms of the Data Protection Legislation and this Agreement.
- 14.6 For the avoidance of doubt, the Customers staff, employees, representatives or crew members employed by or on behalf of the Customer in the capacity of the Data Controller may operate in countries outside the EEA, Switzerland or United Kingdom and may access personal data on mobile devices in accordance with the privacy terms they have agreed with the Customer and APM has no control over such access which shall not be deemed to be a breach of this Processing Agreement.
- 14.7 For the avoidance of doubt this Agreement confirms the consent given by the Customer in the capacity of the Data Controller for the use by the Controller APM's system generated aviation reports, aviation messages or integration to a third party's system as required by the Customer.
- 14.8 Each party shall notify the other without undue delay on becoming aware of a Personal Data Breach.
- 14.9 Each party shall at the written direction of the other, delete or return any Personal Data and copies thereof belonging to the other party on termination of the agreement unless required by the Data Protection Legislation to store the Personal Data.
- 14.10 Each party shall maintain complete and accurate records and information to demonstrate its compliance with this clause 14.

15. ESCROW

- 15.1 APM will, at the Customer's request and expense, place a copy of the current APM source code and supporting documentation appertaining to the Software specified at [Schedule 1](#) and provide information on any incorporated components into an escrow account at the NCC in the United Kingdom, or an alternative escrow organisation mutually agreed in writing by the parties. Further, also at the Customer's request and expense, APM will update source code and documentation as and when the Software is upgraded. In the event that at any time during the term of this Agreement the Customer asks for full verification of the Software to be conducted by the NCC or an alternative agreed escrow organisation then APM will assist with the verification service subject to the Customer paying any fees applied by the NCC or alternative agreed escrow organisation and also paying APM at its analysis daily rate for man-days spent by APM assisting the NCC or the alternative agreed escrow

organisation with the said verification. The terms under which the source code and supporting documentation shall be deposited shall be the standard terms of the NCC or the alternative escrow organisation then applicable unless otherwise agreed by the parties.

16. WAIVER

No failure or delay by a party to exercise any right or remedy provided under this agreement or by law shall constitute a waiver of that or any other right or remedy, nor shall it preclude or restrict the further exercise of that or any other right or remedy. No single or partial exercise of such right or remedy shall preclude or restrict the further exercise of that or any other right or remedy.

17. REMEDIES

Except as expressly provided in this agreement, the rights and remedies provided under this agreement are in addition to, and not exclusive of, any rights or remedies provided by law.

18. ENTIRE AGREEMENT

18.1 This licence and the schedules attached to this licence or otherwise referred to herein contain the whole agreement between the parties relating to the subject matter hereof and supersede all prior agreements, arrangements and understandings between the parties relating to that subject matter.

18.2 Each party acknowledges that, in entering into this licence, it does not rely on any statement, representation, assurance or warranty (whether it was made negligently or innocently) of any person (whether a party to this licence or not) (**Representation**) other than as expressly set out in this licence.

18.3 Each party agrees that the only rights and remedies available to it arising out of or in connection with a Representation shall be for breach of contract.

18.4 Nothing in this clause shall limit or exclude any liability for fraud.

19. VARIATION

No variation of this agreement shall be effective unless it is in writing and signed by the parties (or their authorised representatives).

20. SEVERANCE

- 20.1 If any court or competent authority finds that any provision of this agreement (or part of any provision) is invalid, illegal or unenforceable, that provision or part-provision shall, to the extent required, be deemed to be deleted, and the validity and enforceability of the other provisions of this agreement shall not be affected.
- 20.2 If any invalid, unenforceable or illegal provision of this agreement would be valid, enforceable and legal if some part of it were deleted, the provision shall apply with the minimum modification necessary to make it legal, valid and enforceable.

21. COUNTERPARTS

This agreement may be executed in any number of counterparts, each of which when executed and delivered shall constitute an original of this agreement, but all the counterparts shall together constitute the same agreement.

22. THIRD-PARTY RIGHTS

A person who is not a party to this agreement shall not have any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this agreement, but this does not affect any right or remedy of a third party which exists, or is available, apart from that Act.

23. NO PARTNERSHIP OR AGENCY

Nothing in this agreement is intended to, or shall be deemed to, establish any partnership or joint venture between any of the parties, constitute any party the agent of another party, nor authorise any party to make or enter into any commitments for or on behalf of any other party.

24. FORCE MAJEURE

Neither party shall be in breach of this agreement nor liable for delay in performing, or failure to perform, any of its obligations under this agreement if such delay or failure results from events, circumstances or causes beyond its reasonable control, and in such circumstances the affected party shall be entitled to a reasonable extension of the time for performing such obligations, provided that if the period of delay or non-performance continues for three months, the party not affected may terminate this agreement by giving 14 days' written notice to the other party.

25. NOTICES

25.1 Any notice required to be given under this agreement shall be in writing including Docu-sign and shall be delivered personally, or sent by pre-paid first-class post or recorded delivery or by commercial courier, to each party required to receive the notice as set out below:

- (a) Mr Michael O'Sullivan,
Corporate Director
APM Technologies SA
Voie des Traz 20
PO Box 1100
1211 GENEVA 5
Switzerland

- b) NAME OF CUSTOMER
TITLE OF CUSTOMER
ADDRESS OF CUSTOMER

or as otherwise specified by the relevant party by notice in writing to each other party.

25.2 Any notice shall be deemed to have been duly received:

- (a) if delivered personally, when left at the address and for the contact referred to in this clause;
- (b) if sent by pre-paid first-class post or recorded delivery, at 9.00 am on the second Business Day after posting; or
- (c) if delivered by commercial courier, on the date and at the time that the courier's delivery receipt is signed.

25.3 A notice required to be given under this agreement shall not be validly given if sent by e-mail.

25.4 The provisions of this clause shall not apply to the service of any proceedings or other documents in any legal action.

26. ARBITRATION

- 26.1 Any dispute, controversy or claim arising out of or relating to this agreement or breach thereof, shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said Rules. The place of arbitration shall be London, England. The language of arbitration shall be English.

27. GOVERNING LAW AND JURISDICTION

- 27.1 This agreement and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the law of England and Wales.
- 27.2 The parties irrevocably agree that the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim that arises out of or in connection with this agreement or its subject matter or formation (including non-contractual disputes or claims).

This licence has been entered into on the date stated at the beginning of it.

Signed
for and on behalf of
APM Technologies SA

.....
Director

Signed
for and on behalf of NAME OF
CUSTOMER

.....
Director

SCHEDULE 1 THE SOFTWARE MODULES AND MOBILE APPS

The Licence fees for the Software expressly excludes any Consultation on the APM Optimisers in Scheduling, Operations or Crewing. Such Consultancy is subject to additional fees. The Optimisers will be delivered within the Software as is, without any APM Configuration. 2T means Two Tier Software and 3T means Three Tier Software.

Modules

APM Menu 2T (IT Administration)
SchedulePlanner 3T (Aircraft Scheduling)
ScheduleSim 2T (Aircraft Scheduling)
Airfield Handling Civilian Version 2T (Aircraft Scheduling)
SmartOps 3T (Operations FlightWatch)
CrewLogic 3T (Crewing)
CrewSim 2T (using ScheduleSim scenarios as EASA rules only) (Crewing)
CrewVacation 3T (Crewing)
APM Settings 2T (IT Administration)

CHECK AND AMEND DETAIL AS NECESSARY

APPS

CrewConnect app 3T (Crewing)
OpsConnect app 3T (Operations FlightWatch)

CHECK AND AMEND DETAIL AS NECESSARY

Integration Services

CHECK AND AMEND DETAIL AS NECESSARY

APM Rest API including FlightLog API 3T Integration
(The Endpoints of the API are limited to the Documentation of the API as specified in the API Documentation dated the XXX DATE)
APM Partners 2T Other Integration
IATA Message Server and Transporter 2T (Other Integration)
APM FRMS API 3T (Other Integration)
FRMS data 3T (Other Integration)
APM Flight Crew Manifest APIS 2T (Other Integration)
APM Pax Ingest 2T (Other Integration)
APM Flight Plan Decoder 2T (Other Integration)
MEL ingest of CSV file 3T (Other Integration)
Sunrise Time (HLS) and Sunset Time (HCS) API or CSV 3T (Other Integration)
HINFACT Training software integration 3T (Other Integration)
Place de Formation Software integration 3T (Other Integration)
Workforce API 3T (Other Integration)

Support Modules and Services

CHECK AND AMEND DETAIL AS NECESSARY

APM Mapping Server 3T (Aircraft Scheduling)
APM CrewEngine 3T (Crewing)
APM Ops Engine 2T (Operations FlightWatch)
APM Responsibility Period 2T (IT Administration)
SMS messaging 3T (Other Integration)
APM Pairings Service 3T (Crewing)
APM File Export 2T (Other Integration)

APM Scheduling and Slot Management Centre Modules OVERVIEW

CHECK AND AMEND DETAIL AS NECESSARY

APM's **SchedulePlanner** is an aircraft-scheduling tool that enables users to build a flight program for your production schedule, displayed in either table data format or via a graphical user interface with local and UTC times. The module will automatically match and assign actual or virtual aircraft to the schedule, thereby optimising fleet utilisation. SchedulePlanner also includes the functionality required to manage airport slots according to the definitions of the IATA Airport Slot Management Conference including the IATA Handback and 'Use it or Lose it' process for Historical Slots. The module contains extensive reporting functionality including block, flight, timetable and network connection capabilities on a map for your own operation and those of your code share partners. SchedulePlanner also has capabilities to communicate with third party systems using standard IATA messaging.

Schedule Sim is the sandbox version of our scheduling system outside of the production environment that enables schedulers to run scenarios based on copies of the known production schedules or from SSIM imports or schedules that are still in the design and build phase. ScheduleSim provides flexibility to calculate projected fleet use and flight sector allocation for any given future period. It also includes historical slot functions to prepare slot submissions, so slot coordination can be matched before committing to a production schedule. Complete schedules or periods including slots can be exported to the production schedule controlled by SchedulePlanner. At all times scenarios in ScheduleSim can be compared and synchronised with the Production Schedule in SchedulePlanner.

ScheduleSim also includes the following:

- a) Unlimited number of scenarios
- b) Folders by Period
- c) Graphical Display
- d) Text Display
- e) Flight sector and Flight Series creation, modify, cancellation and deletion wizard
- f) Batch update of flight designator, series type, service type, carrier, ACV version, Code share and DEIs

- g) Synchronise your scenario's with flights from production
- h) Compare to another scenario
- i) Export to another scenario
- j) Compare to production
- k) Export to production
- l) Duplicate/Merge scenarios
- m) Extend weekly schedule scenario
- n) SSIM import in a scenario
- o) SSIM export from a scenario

The full specification of the Scheduling modules is shown in [Appendix A](#)

Airfield Handling is a module to allocate aircraft to a parking location be it a terminal or a ramp at an airport and to display the location of those aircraft on a digital diagram of the airport. The aircraft information and where the aircraft is going to be parked originates from APM's SchedulePlanner and SmartOps systems. Within Airfield Handling the system demonstrates the load time and the off load time to show if there sufficient ground handling at the specified airport.

APM Crewing Centre Modules

CHECK AND AMEND DETAIL AS NECESSARY

APM offer a range of crewing tools that help you create, manage and monitor compliant crew establishments, rosters, crew checks and training so your people and your business can perform at their peak. Once created, rosters are easily distributed to your crew by email, web, SMS or with the option of the APM CrewApp. The Crewing product suite also includes the functionality to create crewing scenarios for future periods to calculate crew establishments.

CrewLogic is a crew planning tool that can calculate legal crew pairings to identify crew establishments for the production flight schedule. Users can then produce an anonymous roster – based on crew pairings which are calculated according to the applicable crew rule flight time limitations and qualifications. This allows users to assign actual crew names to the anonymous roster in order for a crew roster to be produced and released to the crew. The pairing and rostering process can be done manually or to save time, money, and reduce errors, our optimiser can be used. This is included as standard with the software.

CrewLogic also includes the following:

- a) The ability to update crew records to reflect crew duty
- b) Ingest any flight schedule as provided by SchedulePlanner or SmartOps in real time, to reflect current status of all flights
- c) Store crew personal details including preferences within the crew database
- d) The ability to set crew home bases
- e) Functionality to create and amend crew rule set values
- f) Your Company Crew rules will be programmed into the module by APM
- g) Company Crew rules can be configured by the Customer
- h) A Crew training database for the allocation and management of ground, simulator and flight training
- i) Crew Transition Training
- j) Crew Qualifications (Crew Checks) and Attributes
- k) Crew Airport Recency
- l) Crew Requests and Preferences
- m) Crew Swaps
- n) Crew Market Place Swap option
- o) Crew Pairing creation both manual and automatic
- p) function for different pairings for flight deck and cabin
- q) Crew Rostering both manual and automatic
- r) Cosmic Radiation Reporting
- s) Fatigue Management Reporting
- t) Acclimatisation Management and Display
- u) HOTAC Management
- v) Dead Heading Management

- w) Crew Tracking
- x) Extensive Crew Counter Reporting
- y) Crew APIS messages
- z) Crew Dispatch Documents such as Gen Decs and Crew Briefing

CrewSim allows crew schedulers to run crewing scenarios based on known flight schedules or schedules that are still in the design and build phase. Complete schedules or just snapshots can be imported either from ScheduleSim or from the live production schedule in SchedulePlanner. Anonymous crew routes can then be generated in CrewSim – just like in CrewLogic – followed by a simulated roster, with composition and pairing for either actual or virtual crews, calculating the projected, Crew establishment. The crew scheduler can evaluate flights with different crew complements, rules and home bases, using comparison tools within the system to assist their selection of the most beneficial scenario. Additionally, the CrewSim module can ingest a Crew programme from CrewLogic so that amendments can be made in a scenario without affecting the production module. Once the desired scenario has been decided upon, it can be exported into CrewLogic – APM’s live production system – for onward publication to the crew. In addition, CrewSim can also take the required number of duty hours required by a proposed schedule and calculate the minimum number of crew needed at the roster level – with variables such as training, leave and sickness factored in. The crew duties will then be allocated automatically. The module includes extensive text and graphical reporting.

The full specification of the Crewing modules is shown in [Appendix B](#).

APM’s **CrewConnect** is add on option to CrewLogic for crew members. APM’s CrewConnect is a native Android and IOS app with dedicated displays for Tablet and Mobile devices. The app features a calendar-based design that allows Crew Members to dynamically interact with their roster and track their daily activities. In addition, APM CrewConnect offers multiple useful everyday functionalities for Crew Members such as the ability to send requests, set preferences and availability statuses, receive alerts on roster changes, manage their personal information, and check and download their Qualifications list, besides other reports.

CHECK AND AMEND DETAIL AS NECESSARY

APM CrewConnect includes

- a. the ability to obtain and view your released roster on calendar displays (monthly, weekly and daily) and display the details of your flights, training and any other activities.
- b. an option to display your roster in UTC or local time
- c. notifications with acknowledgement of changes on your roster and when your roster is released
- d. a marketplace platform where you can submit and swap parts of your roster with other crew members
- e. notifications of when you receive a roster swap proposal from another crew member.

- f. dedicated menu and shortcut options to send Flights, Destination, Stopover, Off days, Absences and Holidays requests
- g. a function to generate the GenDec (General Declaration) for your flight
- h. the possibility to pick from a custom list of preferences the ones you wish to be considered to build your roster
- i. a personal information area where you can view and modify your personal data including addresses, licences, contacts and passports
- j. an access to view and download the flight logs of your flights and a complete report with the details of your daily activities over the defined period.
- k. the possibility to check your qualifications and obtain them in a PDF report
- l. a function for a crew member to indicate as available or do not disturb
- m. a function to synchronise your roster with your device's calendar default app
- n. an offline mode with read-only access
- o. a customized page to display airline company information and other company links
- p. a shortcut to set your availability status on blank, off days and vacation days.

The full specification of the CrewConnect App for crew members is shown in [Appendix C CrewConnect APP Functionality](#)

APM's CrewVacation. A module for managing the vacation of crew in accordance with leave entitlement rules for both Flight Deck Crew and Cabin Crew. CrewVacation allows to organise vacation campaigns with daily quotas and vacation crew ranking. Crew Members have access to a dedicated web page to input new request, modify future requests, check vacation balance and get status when vacations are published. Crewing administrator can accept or refuse requests depending on the vacation plan (quotas) and then publish the result. For customers having CrewConnect mobile app contracted, a full area dedicated to vacation management is available within the CrewConnect mobile app.

CHECK AND AMEND DETAIL AS NECESSARY

APM OPERATION CONTROL CENTRE MODULES

CHECK AND AMEND DETAIL AS NECESSARY

SmartOps is a specialised flight-watch software tool for real-time decision- making *and provides* a visual display of your live schedule, allowing you to easily see and control your fleet's punctuality.

Rapid decision making is key on the day of operations; SmartOps range of user-friendly tools for the delay, cancellation, diversion, return to gate and reinstatement of flights, support users with this. As actions are taken, SmartOps will warn you of any aircraft turn-around times or curfews which are compromised and alerts users of issues such as forbidden airport or take-off weight tolerance. Users of APM's CrewLogic will also be warned if crew limitations and rest are impacted by delays and indicate how long a flight can be delayed before a crew is out of duty.

Messages including MVT, MVTA, FPL's, LDM's, CPM, FMM, FOB, ATC and ETE from either the Sita, Arinc or email networks will import and process automatically to update your display accordingly. If your airline opts to delay one or more flights, SmartOps can generate delay messages that are relayed to designated parties and the system will also generate ASM, ASD's and AAS messages.

SmartOps provides a range of customisable reports which include fuel uplift and fuel burn, delay, day of operations, hub, aircraft allocation and of course flight log reports. The system will also capture all data to fully complete a flight-log/voyage report for each sector. Within SmartOps is a dynamic situational display product that uses real-time information to display aircraft positions on a world map.

The full specifications of the SmartOps module is shown in [Appendix D](#)

As an add on option to SmartOps is APM **OpsConnect** which is a native Android and IOS app designed to allow airlines ground operations and management to view flight schedule, check fleet assignment as well as closely monitor ongoing operations and flight status. The app also includes a search function enabling users to look for specific flights and access additional information, including flight times, crew members data, delay information, sector briefs, and memos.

The full specifications of the OpsConnect App is shown in [Appendix E](#)

SCHEDULE 2 SUPPORTING SOFTWARE MODULES, IATA MESSAGING & INTEGRATION SERVICES

CHECK AND AMEND DETAIL AS NECESSARY

APM has developed comprehensive integration with third party systems. We currently deploy most of this integration using Web Services with some SOAP protocols, but we are migrating this to Restful services over the next 18 months. The integration includes a number of integration services for data transfer to other systems.

Unless explicitly stated otherwise under the wording “*NON STANDARD INTEGRATION POLICY*”, all system integrations shall be based on a **push mechanism**. The system that originates or owns a given dataset shall be solely responsible for **pushing** that data to the receiving system(s). No system shall rely on a **pull mechanism** for data retrieval unless such exception has been clearly documented and agreed upon under the aforementioned designation.

IT Administration-APM Settings

Deploying a system is one thing, but ensuring that the right individuals, teams, groups and departments have the appropriate access rights is also vital to the smooth operation of any system. APM's Settings module - provided with any APM module - provides an airline's IT leadership with the ability to assign user rights, group rights as well as standardise user templates, colours and other settings, for all modules and apps so the APM system is tailored to meet the unique needs of each airline. There is no additional charge for this software, it is supplied in support of APM Software Modules.

IATA and ICAO Messaging (for users of Scheduling/SmartOps or Crewing Modules) including the Telex Decoder and Message Transporter Service

APM includes a comprehensive IATA and ICAO messaging service using your choice of Sita, Arinc or email messaging applicable to the modules you are renting. The service receives and transmits the IATA messages. There is no additional charge for this software, it is supplied in support of APM Software Modules.

The APM Telex Decoder

This service decodes all incoming IATA and ICAO compliant messages added by the APM Message Transport service to the database and updates the data from these messages into the flight sectors

APM Message Transported Service

This service retrieves IATA messages from a SITA inbox or an email box and inserts them into the APM database. It also allows the user to deposit IATA messages generated by the APM system in an out folder and send them to the recipient via SITA or via email.

The APM Ops Engine (for users of SmartOps)

This service performs all automated background tasks related to SmartOps for a draft (to be validated by third party systems) automatic Zero Fuel Weight Calculation. There is no additional charge for this software, it is supplied in support of APM's SmartOps Software Modules.

The APM Crew Engine Service (for users of CrewLogic)

This service performs all automatic background tasks related to Crewlogic (automatic check & save of rotations following a modification on a flight so the crewing module is updated with the new flight values and automatically updates crew counters. There is no additional charge for this software, it is supplied in support of APM's CrewLogic Software Modules.

APM – REST API

The APM -REST- API is a service that is a restful service that allows to obtain data from APM system, and to modify data into APM system, using the standard GET/POST/PUT/DELETE http methods. It allows interaction on following business status: Current Flight Status, Flight Logs, Crew Personal Data, Airport contacts, Airport message addresses, Airport equipment.

The APM FCM Generators for Flight Crew Manifest messages generation (APIS)

Automatic flight crew manifest message generator of agreed APIS messages following which the message is sent to the appropriate authority.

The APM File Export Service

This service enables the user to automatise the following tasks:

- Export and send via email a CSV file of Standard and Closed Accruals
- Export and send via email a CSV file of the APM Generic Stats Report
- Export and send via email a PDF file of the APM Extended Daily Ops Report
- Export and send via email a CSV file of Crew Actual Block Hours
- Export and send via email a CSV file of past flight sectors with missing data (OOOI, Delays...)
- Export and send via email a PDF file of the APM GenDec Report to crews and/or airport ground staff

The APM Flight Plan Decoder

APM offer an automatic ingest of ICAO formatted long flights plans directly into the APM SmartOps OCC module.

The FRMS SAFE and CARE suite (Fatigue Management)

Based on the popular fatigue scale, Samn Perelli, the SAFE and CARE models are used to manage crew fatigue. The integration of the SAFE and CARE Suite of

predictive fatigue models with our crewing module CrewLogic, offers customers with a SAFE suite license the ability to easily track the fatigue risks to their crew members. The SAFE colour scale is used in CrewLogic's graphical display to immediately indicate whether a crew member is at a normal level, reaching fatigue or at a level where fatigue may become problematic. Users must have a SAFE and or CARE license; more information can be found on their website:

<https://www.frmsc.com/the-safe-suite/> Please note the Standard User Package permits 5 files per 15 minutes to be uploaded from FRMS via the API. Please note the FRMS Safe and Care services are located in Dublin, Ireland.

The APM Pax Ingest Service

The APM Pax File Ingest Service picks up passenger number XML file and ingests the Pax figures into the APM database commercial segments.

The APM Passenger File Transformer Service

This Service picks up a file in a non-XML format (supplied by a third-party system) from a folder. It transforms them into XML file message structure that is compliant with an APM XML schema. Specific versions of this transformation service can be developed to deal with particular file formats.

CHECK AND AMEND DETAIL AS NECESSARY

APM Partner Integration Service (Code Shares (Res System & Third Party data feed)

With APM's Partner Integration Services, airlines using SchedulePlanner & SmartOps can:

Ingest SSIM's SSM's and ASM's from partner airlines

View all marketing flights on a separate schedule GUI and filter by airline if required

Send necessary messages either by Sita or Type B about partner flights to 3rd party systems including Amadeus, airports and handling systems to show codeshare details

Set specific date ranges for the agreed operational period

Manage incoming DEI 50's and DEI 10's, and translate outgoing messages to show the operating and marketing airlines

Ingest MVT's and MVA's regarding partner flights for delays, cancellations and other movement changes.

View all connections based on your airlines and partners flights on a live map

Export SSIM's SSM's and ASM's from partner airlines

The APM Responsibility Period Auto Change Date

Changes the date of any of the APM Responsibility/Business periods automatically to user configured entries.

APM Mapping Service

A Rest service to display interactive maps within APM modules.

APMCrewPairings

A Rest service to be developed in order to import crew pairing information

SMS Service

A service to send specific messages to an SMS supplier

SCHEDULE 3 AIRLINE INFORMATION

AIRLINE NAME will supply the following information to APM
CHECK AND AMEND DETAIL AS NECESSARY

List of Information requests

Any integration data and specifications to support agreed developments

A copy of your Per Diem rules

A copy of your Chapter 7 Crew Rules for all Crew Roles

A copy of your AFIRS and ACARS messages you want us to ingest into the SmartOps module

A copy of all the

S messages you require us to generate

Data to feed crew counters

SSIM file of your schedule

SCHEDULE 4 APM SOFTWARE, MOBILE APP AND APM INTEGRATION RENTAL FEES

CHECK AND AMEND DETAIL AS NECESSARY

All payments from the Customer to APM shall be in € EURO. All invoices are payable within 30 days from the date of invoice.

Customer shall pay to APM a monthly software license rental fee of € EURO 5,738 from **INSERT DATE** for the aircraft scheduling modules license granted pursuant to [clause 4](#) of this agreement and as specified in Schedule 2.

Number of Aircraft INSERT	Price per month
Fees modules including apps	13,300
SAFE/CARE and interfaces package	5,450
TOTAL	18,750

CHECK AND AMEND DETAIL AS NECESSARY

The fees are based on :

- 13 aircraft
- 30 concurrent users
- 550€/aircraft/per month

1 to 6 Aircraft per month

Fees Modules inc apps	Euro 9,450
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 14,900

7 Aircraft per month

Fees Modules inc apps	Euro 10,000
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 15,450

8 Aircraft per month

Fees Modules inc apps	Euro 10,550
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 16,000

9 Aircraft per month

Fees Modules inc apps	Euro 11,100
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 16,550

10 Aircraft per month

Fees Modules inc apps	Euro 11,650
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 17,100

11 Aircraft per month	
Fees Modules inc apps	Euro 12,200
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 17,650

12 Aircraft per month	
Fees Modules inc apps	Euro 12,750
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 18,200

14 Aircraft per month	
Fees Modules inc apps	Euro 13,850
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 19,300

15 Aircraft per month	
Fees Modules inc apps	Euro 14,400
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 19,850

16 Aircraft per month	
Fees Modules inc apps	Euro 14,950
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 20,400

17 Aircraft per month	
Fees Modules inc apps	Euro 15,500
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 20,950

18 Aircraft per month	
Fees Modules inc apps	Euro 16,050
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 21,500

19 Aircraft per month	
Fees Modules inc apps	Euro 16,600
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 22,050

20 Aircraft per month	
Fees Modules inc apps	Euro 17,150
SAFE/CARE and interfaces	Euro 5,450
Total Per Month	Euro 22,600

SCHEDULE 5 APM SOFTWARE INTEGRATION AND DEVELOPMENT CUSTOMISATION FEES

The following functions will be developed and deployed as functions within or integrating with the software defined in Schedule 1. The fees for any agreed developments or interfaces will be invoiced two (2) months before delivery of the software to the Customer's test environment. All invoices will be due for payment within 30 days of issue.

Prior to the commencement of any development APM will issue a summary Change Request for each development listed below to commence upon signature of that Change Request, which will be expected to be returned signed by the Customer within 7 days. The Change Request will be considered signed if the Customer does not make any comment requesting amendment to the Change Request within 7 days, and as such APM will commence the development.

CHECK, INSERT AND AMEND DETAIL AS NECESSARY

Developments

Interfaces

Deployment Date 31 December 2026 with a fee of 0 Euro

SCHEDULE 6 APM INSTALLATION AND TRAINING FEES

All payments This includes Installation on the airlines hardware, Rules Development, other Development & Training for the Mandatory Module,

	APM Software	Price in EURO Single Fees
APM Installation, Set Up and Company Crew Rules Set	APM will install the software at the Customers location and Configure the Company Rules Set	EURO INSERT COST
Mandatory Module Training	ScheduleSoftware Training Ops and OpsConnect Software Training Crew Software Training CrewConnect APMSettings IT Admin Training A fixed fee for an allocation of 20 man-days for Training and on-site coaching. A Training man-day is a day spent training irrespective of the number of trainers APM send to the course. It is recommended that course sizes should not exceed 8 delegates. Additional Training	Included
FRMS	Remote Training of Fatigue Software a.Fatigue and Countermeasures Training (FACT) b. Navigating and interpreting SAFE and CARE 2 Days Max 16 students per day	EURO INSERT COST
TOTAL COST OF APM INSTALLATION, SETUP, INTEGRATION & TRAINING COSTS		EURO INSERT COST

SCHEDULE 7 OTHER SOFTWARE DEVELOPMENT AND TRAINING FEES

New Developments Requirements must be defined by the customer, quoted by APM Technologies and mutually agreed.

Additional Developments & Training will be billed at the following rates

Detail	Main Functions	Price in EURO
Additional Crew Rule Requirements	Daily rate	EURO INSERT COST
Developments	Daily rate	EURO INSERT COST
Analysis	Daily rate	EURO INSERT COST
Training	Daily rate	EURO INSERT COST

In the event that a full day not being worked, then APM will bill services in fractions of a day with the rate being divided by 8 hour periods.

It should be noted APM Training instructors are normally booked a minimum of six weeks in advance and therefore the Customer should plan accordingly. APM will always try to supply a trainer for the requested dates but this is conditional upon an Instructor being available.

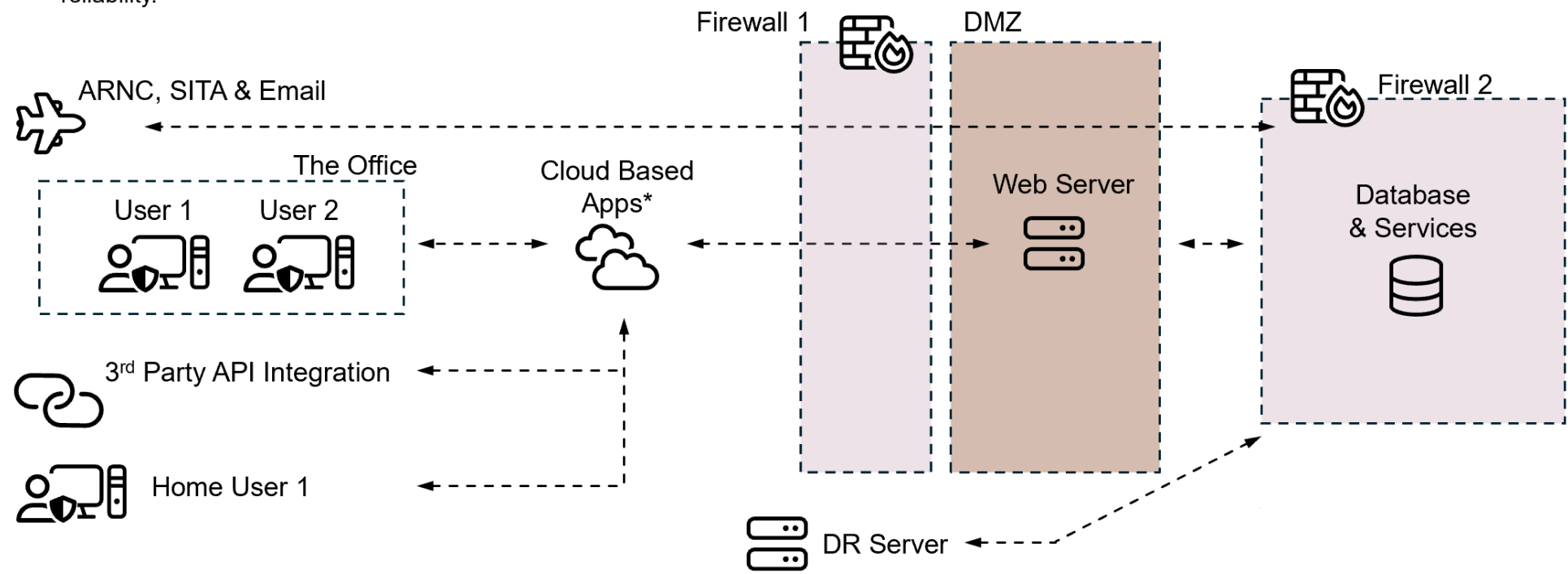
SCHEDULE 9 CLOUD ENVIRONMENT

SmartOps, SchedulePlanner, CrewLogic, CrewConnect :

Airline size: 10 AC / 500 Crew

The Setup – Cloud Based: Azure

Here is a diagrammatical example of your cloud environment – securely hosted and fully compliant, with controlled access from anywhere in the world. It enables seamless communication between users, systems, and external services, while maintaining the highest levels of data protection and reliability.



SCHEDULE 9 PHYSICAL ARCHITECTURAL & TECHNICAL HARDWARE SPECIFICATIONS FOR UP TO 10 AIRCRAFT

SmartOps, SchedulePlanner, CrewLogic, CrewConnect :

Airline size: 10 AC / 500 Crew

APM System Modules:

SchedulePlanner 3T, SmartOps 3T, CrewLogic, CrewConnect:

Airline size: 10 AC / 500 Crew

Please Note:

1. These specifications are guidelines only based on the implementation of the stated APM modules/databases. The actual specification will be subject to change with detailed discussions with the customer to identify the APM modules required and the size/operation of customer's business.
2. APM provide a production database backup service to ensure a backup of the live system is taken at set frequency, it is then the customers responsibility to ensure the backups are stored away from the production environment.
3. Where Web Apps are used to provide crew with access to the APM system, the customer must ensure that a safe connection is provided from the APM servers to the internet by using secure data transfer protocols such as https.
4. All hard drives must be Solid State Disks (SSD) for optimal performance.
5. All Network Interface Connections (NIC) must be Gigabit Ethernet and use TCP/IP standard IPv4)
6. **APM will liaise with the customer to ensure their APM system and IT configuration is optimal.**

	Client PC/Laptop		Mandatory	
Purpose	Access to network/APM system	Databases: Prod DB, Partners DB, MongoDB	Internal Services / SmartOps 3T / SchedulePlanner 3T	Mobile Apps / APM Rest API
CPU	INTEL 4 core CPU (>2022)	INTEL 8 core CPU (>2022)	INTEL 8 core CPU (>2022)	INTEL 4 core CPU (>2022)
RAM	16GB	24GB	16GB	16GB
Storage	Disk C: 200GB	Disk C: 100GB Disk E: 200 GB	Disk C: 100GB Disk E: 100 GB	Disk C: 100GB Disk E: 40GB
OS	Supported Windows O/S	Windows Server 2019 / 2022	Windows Server 2019 / 2022	Windows Server 2019 / 2022
Special Requirements	Screen: 15" with 1600x900 or higher resolution. Larger external monitor recommended.		Interface to internet - will require HTTPS certificate	Interface to internet - will require HTTPS certificate

Test and Disaster Recovery (DR) Environments

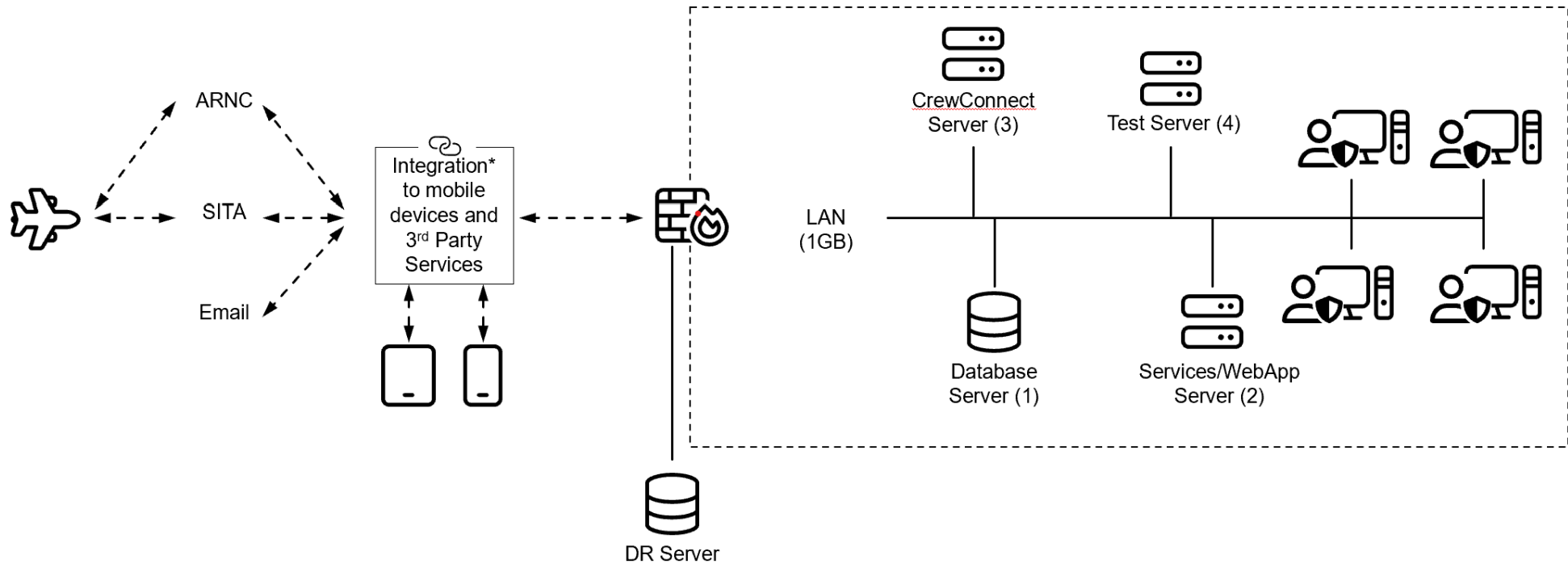
Please Note:

1. The Test server:
 - a. Test server is optional and depends on the customer's needs.
 - b. The performance of the Test server will be well below the performance of the Production environment.
2. Disaster Recover Environment:
 - a. The Disaster Recovery (DR) environment is recommended to ensure the availability of the APM system in case of unforeseen events causing local datacentre failures.
 - b. The exact setup/ specification will be dependent on the customers DR solution and which APM modules the customer needs to have available in the DR environment. Further detailed discussions will be required with customer.
 - c. The server specifications are based on DR environment being hosted by the customer.
 - d. The DR environment is based on an Active/passive scenario (whereby a manual failure will be needed).
 - e. These are minimum server requirements and will deliver degraded system performance for a limited number of users.
 - f. The APM system functionality available in a DR situation will be limited to critical functions only.
 - g. The customer may choose to have a higher specification DR environment to get better performance.

	Client PC/Laptop	Optional (TEST)	Recommended (Disaster Recovery)
Server		T1	DR1
Purpose	Access to network/APM system	Test Environment	Disaster Recovery Environment (<i>Degraded Performance</i>)
CPU	INTEL 4 core CPU (>2022)	INTEL 8 core CPU (>2022)	INTEL 8 core CPU (>2022)
RAM	16GB	32GB	32GB
Storage	Disk C: 200GB	Disk C: 100GB Disk E: 200 GB	Disk C: 100GB Disk E: 400 GB
OS	Supported Windows O/S	Windows Server 2019 / 2022	Windows Server 2019 / 2022
Special Requirements	Screen: 15" with 1600x900 or higher resolution. Larger external monitor recommended.		

The Setup – On Premiss

Here is a diagrammatical example of your environment, safe and secure behind a firewall while also able to communicate with the external world.



*Any non-API Integration must be deployed via a VPN.

Please Note:

3. The Test server:
 - a. Test server is optional and depends on the customer's needs.
 - b. The performance of the Test server will be well below the performance of the Production environment.

4. Disaster Recover Environment:
 - a. The Disaster Recovery (DR) environment is recommended to ensure the availability of the APM system in case of unforeseen events causing local datacentre failures.
 - b. The exact setup/ specification will be dependent on the customers DR solution and which APM modules the customer needs to have available in the DR environment. Further detailed discussions will be required with customer.
 - c. The server specifications are based on DR environment being hosted by the customer.
 - d. The DR environment is based on an Active/passive scenario (whereby a manual failure will be needed).
 - e. These are minimum server requirements and will deliver degraded system performance for a limited number of users.
 - f. The APM system functionality available in a DR situation will be limited to critical functions only.
 - g. The customer may choose to have a higher specification DR environment to get better performance.

Hardware for up to 40 Aircraft using a Firebird Database

APM System Modules:

SmartOps, SchedulePlanner, CrewLogic, CrewConnect :

Airline size: 40 AC / 2000 Crew

Please Note:

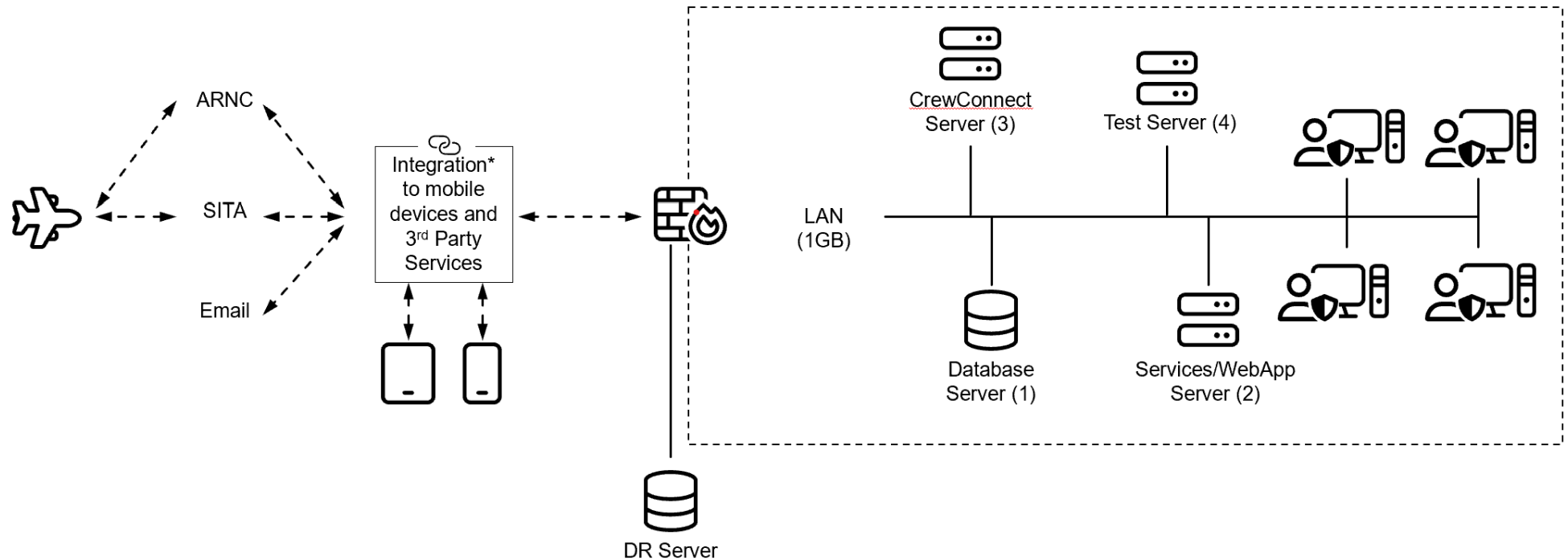
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3. Where Web Apps are used to provide crew with access to the APM system, the customer must ensure that a safe connection is provided from the APM servers to the internet by using secure data transfer protocols such as https.
4. The Test server is optional and depends on the customer's needs.
5. The Disaster Recovery (DR) backup environment is recommended to ensure the availability of the APM system in case of unforeseen events causing local datacentre failures. The exact setup/ specification will be dependent on the customers DR solution and which APM modules the customer needs to have available in the DR environment. Further detailed discussions will be required with customer.
6. All hard drives must be Solid State Disks (SSD) for optimal performance.
7. All Network Interface Connections (NIC) must be Gigabit Ethernet and use TCP/IP standard IPv4)
8. APM will liaise with the customer to ensure their APM system and IT configuration is optimal.

Production Environment

Server	Client PC/Laptop	Mandatory				
		1	2	3	4	5
Purpose	Access to network/APM system	Databases: Prod DB	Internal Services / SmartOps 3T / SchedulePlanner 3T	Mobile Apps / APM Rest API	Partners DB MongoDB	Integration Services
CPU	INTEL 4 core CPU (>2022)	INTEL 8 core CPU (>2022)	INTEL 8 core CPU (>2022)	INTEL 8 core CPU (>2022)	INTEL 8 core CPU (>2022)	INTEL 4 core CPU (>2022)
RAM	16GB	16GB	16GB	16GB	16GB	16GB
Storage	Disk C: 200GB	Disk C: 100GB Disk E: 200 GB	Disk C: 100GB Disk E: 100 GB	Disk C: 100GB Disk E: 40GB	Disk C: 100GB Disk E: 200GB	Disk C: 100GB Disk E: 100GB
OS	Supported Windows O/S	Windows Server 2019 / 2022	Windows Server 2019 / 2022	Windows Server 2019 / 2022	Windows Server 2019 / 2022	Windows Server 2019 / 2022
Special Requirements	Screen: 15" with 1600x900 or higher resolution. Larger external monitor recommended.					Interface to internet - will require HTTPS certificate.

The Setup – On Premiss

Here is a diagrammatical example of your environment, safe and secure behind a firewall while also able to communicate with the external world.



*Any non-API Integration must be deployed via a VPN.

APM will liaise with the customer to ensure their APM system and IT configuration is optimal

Hardware for up to 40 Aircraft using an Oracle database

1 APM System Modules:

SmartOps, SchedulePlanner, CrewLogic, CrewConnect :

Airline size: 40 AC/2000 Crew

Please Note:

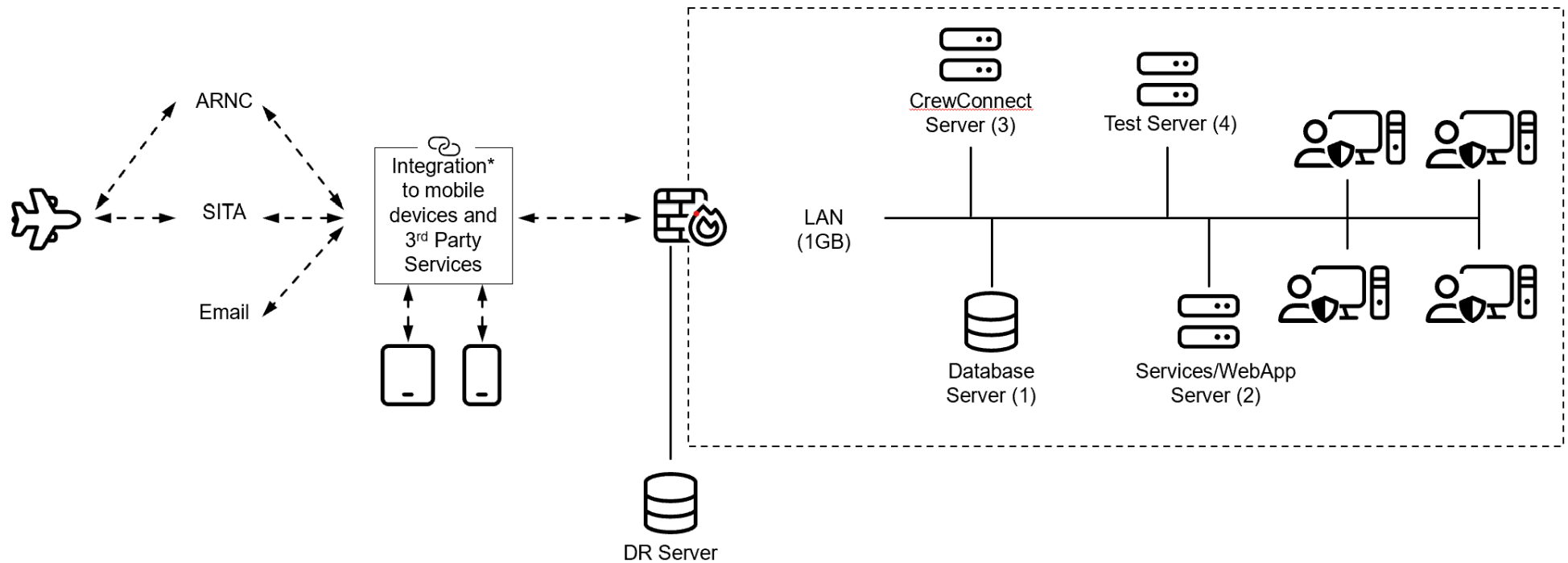
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4. The Test server is optional and depends on the customer's needs.
5. The Disaster Recovery (DR) backup environment is recommended to ensure the availability of the APM system in case of unforeseen events causing local datacentre failures. The exact setup/ specification will be dependent on the customers DR solution and which APM modules the customer needs to have available in the DR environment. Further detailed discussions will be required with customer.
6. All hard drives must be Solid State Disks (SSD) for optimal performance.
7. All Network Interface Connections (NIC) must be Gigabit Ethernet and use TCP/IP standard IPv4)
8. APM will liaise with the customer to ensure their APM system and IT configuration is optimal

	Client PC/Laptop	Mandatory					Optional	Recommended
Server		1	2	3	4	5	6	7
Purpose	Access to network/APM system	Databases: Prod DB, SyncDB,	Internal Services	Apm Crew Connect	Partners DB MongoDB	Integration Services/Web Apps	Test Environment	Disaster Recovery Environment
CPU	INTEL 2 core CPU (>2020)	INTEL 10 core CPU (>2020)	INTEL 4 core CPU (>2020)	INTEL 8 core CPU (>2020)	INTEL 8 core CPU (>2020)	INTEL 4 core CPU (>2020)	INTEL 8 core CPU (>2020)	<i>To be Agreed – See notes</i>
RAM	8GB	24GB	16GB	16GB	16GB	16GB	32GB	
Storage	Disk 1: 200GB	Disk 1: 100GB Disk 2: 500 GB	Disk 1: 60GB Disk 2: 100 GB	Disk 1: 60GB Disk 2: 40GB	Disk 1: 60GB Disk 2: 200GB	Disk 1: 60GB Disk 2: 100GB	Disk 1: 60GB Disk 2: 200 GB	
OS	Supported Windows O/S	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019
Special Requirements	Screen: 15" with 1600x900 or higher resolution. Larger external monitor recommended.					Interface to internet - will require HTTPS certificate		

APM will liaise with the customer to ensure their APM system and IT configuration is optimal

The Setup – On Premiss

Here is a diagrammatical example of your environment, safe and secure behind a firewall while also able to communicate with the external world.



*Any non-API Integration must be deployed via a VPN.

info@apmtechnologies.com I www.apmtechnologies.com I +41227178499

Hardware for over 40 Aircraft up to 200 Aircraft using an Oracle server

APM System Modules:

SmartOps, SchedulePlanner, CrewLogic, CrewConnect :

Airline size: 40 plus AC / 4000 Crew

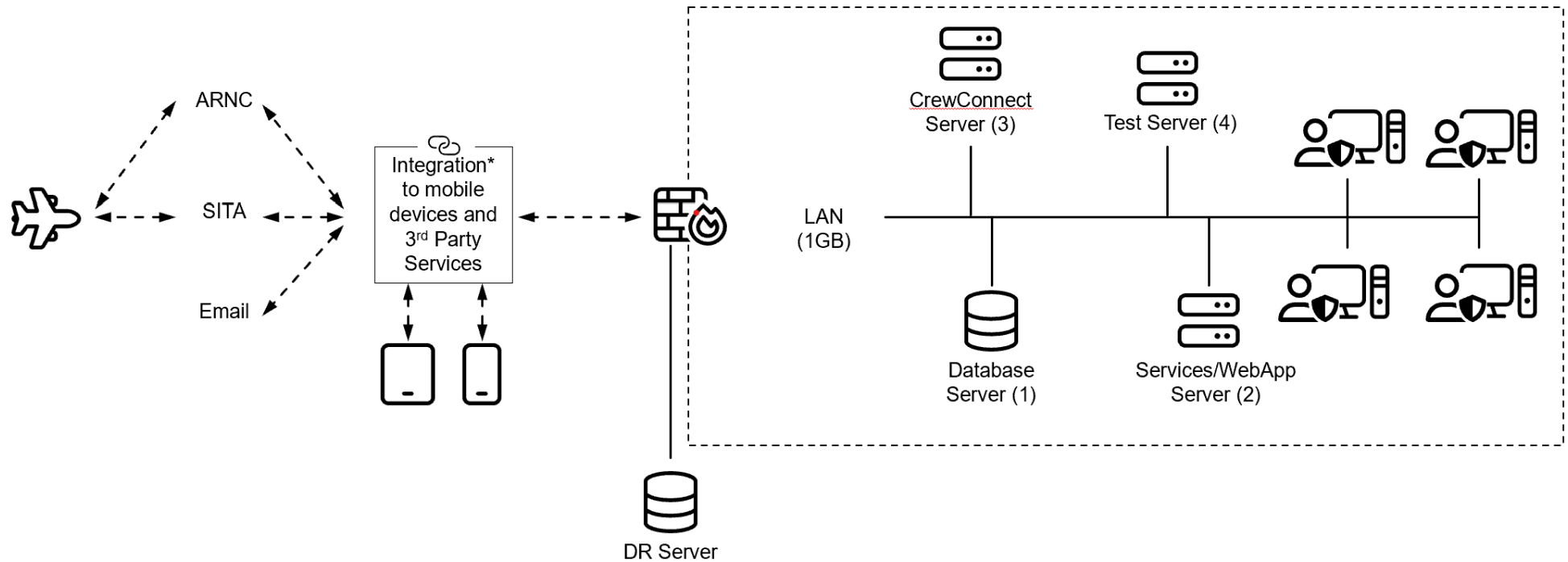
Please Note:

1. These specifications are guidelines only based on the implementation of the stated APM modules/databases. The actual specification will be subject to change with detailed discussions with the customer to identify the APM modules required and the size/operation of customer's business.
2. APM provide a production database backup service to ensure a backup of the live system is taken at set frequency, it is then the customers responsibility to ensure the backups are stored away from the production environment.
3. Where Web Apps are used to provide crew with access to the APM system, the customer must ensure that a safe connection is provided from the APM servers to the internet by using secure data transfer protocols such as https.
4. The Test server is optional and depends on the customer's needs.
5. The Disaster Recovery (DR) backup environment is recommended to ensure the availability of the APM system in case of unforeseen events causing local datacentre failures. The exact setup/ specification will be dependent on the customers DR solution and which APM modules the customer needs to have available in the DR environment. Further detailed discussions will be required with customer.
6. All hard drives must be Solid State Disks (SSD) for optimal performance.
7. All Network Interface Connections (NIC) must be Gigabit Ethernet and use TCP/IP standard IPv4)
8. APM will liaise with the customer to ensure their APM system and IT configuration is optimal.

	Client PC/Laptop	Mandatory						Optional	Recommended
Server		1	2	3	4	5	6	7	8
Purpose	Access to network/APM system	Databases: Prod DB, SyncDB,	Internal Services	Apm Crew Connect	Partners DB MongoDB	Integration Services/Web Apps	Web Apps	Test Environment	Disaster Recovery Environment
CPU	INTEL 2 core CPU (>2020)	INTEL 14 core CPU (>2020)	INTEL 4 core CPU (>2020)	INTEL 16 core CPU (>2020)	INTEL 8 core CPU (>2020)	INTEL 4 core CPU (>2020)	INTEL 4 core CPU (>2020)	INTEL 16 core CPU (>2020)	<i>To be Agreed – See notes</i>
RAM	8GB	24GB	16GB	16GB	16GB	16GB	16GB	32GB	
Storage	Disk 1: 200GB	Disk 1: 100GB Disk 2: 1TB	Disk 1: 60GB Disk 2: 100 GB	Disk 1: 60GB Disk 2: 40GB	Disk 1: 60GB Disk 2: 200GB	Disk 1: 60GB Disk 2: 100GB	Disk 1: 60GB Disk 2: 100GB	Disk 1: 60GB Disk 2: 200 GB	
OS	Supported Windows O/S	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019	Windows Server 2016 / 2019
Special Requirements	Screen: 15" with 1600x900 or higher resolution. Larger external monitor recommended.						Interface to internet - will require HTTPS certificate		

The Setup – On Premiss

Here is a diagrammatical example of your environment, safe and secure behind a firewall while also able to communicate with the external world.



*Any non-API Integration must be deployed via a VPN.

SCHEDULE 9 SLA SUPPORT SERVICES, DEFINITIONS AND RESOLUTION

Severity level 1 (hereinafter “SLA 1”)

The Licensed Software (or a component thereof): (A) is unusable, catastrophically fails or ceases to provide its material, documented, functions; provides erroneous/incorrect output or displays (based upon the accurate input of data) or (B) causes a system, server, workstation, or application to be substantially unusable, catastrophically fail or cease to provide material functions. A viable workaround to restore such operation or functionality is not readily available. An SLA1 should not be used to obtain HelpDesk training advice, such advice shall only be supported during normal office hours.

Severity level 2 (hereinafter “SLA2”)

The Licensed Software (or a component thereof) is not fully functional (e.g., the Licensed Software has major restrictions on functionality; the Licensed Software performs most, but not all, material documented functions), or causes performance degradation of a system, server, workstation, or application. A viable workaround to restore such operation or functionality is not readily available or such workaround is available but material problems remain. The application usability is to the point that its value to Customer is substantially diminished. An SLA2 should not be used to obtain HelpDesk training advice, such advice shall only be supported during normal office hours.

Severity level 3 (hereinafter “SLA 3”)

The Licensed Software (or a component thereof) operates with minor, non-material restrictions on certain functions or causes minor performance degradation of systems that are not material to their operation.

An SLA will not be considered as an SLA if it is due to the acts or omissions of the Customer or the Customer’s agents or subcontractors including but not limited to the following:

- Bad data entry by the Customer
- Network failure
- VPN failure
- Failure of the Customer’s Email or Message Transfer systems including MQ Series
- Hardware failure or limitation including operating system compliance, memory limitation or certificates causing bad data, message or integration failure
- Failure by Customer to host the software and services on the recommended hardware as communicated from APM from time to time
- Failure by the Customer to comply with their Cyber and Security or Anti Virus obligations as defined within this Agreement

- The reported SLA is not in accordance with the specification of the Licenced Software as ordered by Customer
- Data errors due to Customer third party providers
- Data errors due to Customer third party supplier network or environment failures or configuration changes
- Any period of delay caused by failure of Customer to provide APM with a duly sanitized and usable database so that APM may at that stage begin its analysis of any reported SLA in order for APM to provide a Patch

APM shall provide:

(a) Support services in support of the APM Software modules specified at [Schedule 1](#) as set forth below and in accordance with the Service Level Arrangements as set forth at [Schedule 9](#). APM will only respond to faults when reported in writing (including email) using an APM System Fault Report form as set out at [Schedule 10](#) and will issue an APM Delivery Form as set forth at [Schedule 11](#) for any updated software patch. For the avoidance of doubt the Help Desk Support Services do not include Consultation on the APM Optimisers, unless Consultation has been agreed within the Agreement.

(b) Helpdesk facilities are for support of the specified APM Software modules for SLA1, SLA 2 and SLA3. This service is available during normal working Swiss and UK Business Hours Monday to Friday excluding Swiss Bank Holidays Responses will be immediate. Fix targets as follows;

SLA1 Within 24 hours, on receipt of the incident ticket to delivery to test for Customer acceptance

SLA 2 Within 5 working days, on receipt of the incident ticket to delivery to test for Customer acceptance

SLA 3 Future Release

(c) 24 hours a day, Monday to Sunday by Customer telephoning the Out of Hours support line, for business-critical issues defined as SLA 1. Response time within the hour and a target fix within 24 hours from when the reported SLA is supported by an APM System Fault Report as per [Schedule 10](#).

APM shall provide the Support Services from APM's premises in Geneva and in the event that APM personnel have to visit Customer locations to carry out such services the Customer agrees to pay APM all reasonable travelling, accommodation and living expenses provided always that APM sought prior approval from the Customer and in accordance with the following,

APM support obligations hereunder shall not extend to, and APM shall have no responsibility whatsoever for, excluded causes, basic training, technical consulting, or additional software added by the Customer to the system. Excluded causes shall

mean any failure of the Software due to (i) third party data feeds, (ii) hardware failures, (iii) hardware or peripheral equipment upgrades or modifications, (iv) operating system upgrades without prior written agreement between the parties, (v) changes to the system hardware configuration installed by the Customer without the approval of APM, (vi) failure of the Customer's personnel to perform proper system administration or operator functions, or (vii) modifications to the Software not provided by APM. APM shall not be responsible for any degradation of performance of the Software caused by Customer's use of the system to run other software not provided by APM or approved for use by APM with the system. Charges for corrections to difficulties or defects traceable to the Customer's software modification errors or systems changes shall be billed to the Customer as non-maintenance services in accordance with APM's then current rates.

Severity 1 Support Method/Hours	Severity 2 and 3 Support Method/Hours
Telephone call by IT personnel or Head of IT to +41227178499 or +41227883661 (out of Swiss office hours)	Telephone call by IT personnel or Head of IT to +41227178499 or +41227883661 (out of Swiss office hours) Email info@apmtechnologies.com
Normal Mon to Fri 0900 – 1700 Swiss Hours plus 'Out of Office Hours' coverage 1730 to 2300 Monday to Friday and 0900 to 2300 Saturday and Sunday and Swiss Bank Holidays	Mon – Fri 09:00 – 17:00 (Swiss time) excluding Swiss bank holidays
Escalation and Commercial Representatives Michael O'Sullivan – + 447789637467	Escalation and Commercial Representatives Michael O'Sullivan – + 447789637467

Problem Correction and Resolution.

APM shall respond to Errors based upon their severity level identified below.

For problems identified as Severity Level 1, **AIRLINE NAME IT Department INSERT IT EMAIL ADDRESS** shall report such problems using APM's

- (i) Hotline number +41227883661

OR DURING NORMAL WORKING HOURS THE

- (ii) APM Helpdesk number +41227178499

or such other number as may be provided by APM from time to time.

For problems identified as severity levels 2 or 3, **AIRLINE NAME** Personnel shall report such problems by calling above number and e-mailing APM's System Fault Report (as set forth at [Schedule 10](#)) to the e-mail address identified by APM.

SCHEDULE 10 APM SYSTEM FAULT REPORT

APM Software Module		
Software Version IMPORTANT		
Please indicate	Test Environment	Live Environment
Describe the Fault and where possible provide a screen shot of the Fault (Please ensure any screen shot supplied does not contain any sensitive or restricted data)		
Describe the Impact of the Fault		
Can the System still be used	Yes	No
If No please expand		
Name of Person Issuing this form		
Telephone Number		
Email Address		
Date of Issue		

SCHEDULE 11 APM DELIVERY FORM

APM Software Module		
Software Version Release		
Please indicate	Test Environment	Live Environment
Description of the delivery		
Impact on the Database		
Impact on the Business User, if any		
Name of APM Staff Issuing this form		
Telephone Number		
Email Address		
Date of Issue		

AMEND AS NECESSARY

APPENDIX A SCHEDULING FUNCTIONALITY

Features of Scheduling	
Aircraft • Aircraft type and sub-type database • Aircraft Registration Database • Aircraft Configuration Database • Aircraft Availabilities Database • Aircraft Route Database • Aircraft Route Map Display • Aircraft Block and Burn Database • Aircraft Overflight Export Database • Aircraft flight type dictionary by series and sector with related cost attributes Airports • Airport Database • Airport Region Database • Airport Default Terminal Wizard • Airport curfew and opening times database • Time Zone Database including IATA seasons Air Traffic Control • ATC Flight Number Rules Dictionary • ATC Flight Number Generation by IATA season/Period • ATC Messages Audit and History • Flight Sector schedule History • ATC Flight Number Generation by IATA season/Period	Graphical Displays • Aircraft schedules and slots • Aircraft in departure and arrival order • Aircraft Maintenance status • Towing indicator to and from standstill • Optimised Fleet Assignment Intuitive Function Wizards • Flight sector and Flight Series creation, modify, cancellation and deletion wizard • Batch update of flight designator, series type, service type, carrier, ACV version, Code share • Memos (notes) on a Flight Series • Briefs (notes) on a Flight Sector • Flight Search function • Flight Sector Clearance function IATA Standards and Messages • IATA SSM Generation including designated DEIs • IATA SSIM Export including designated DEIs • IATA SSIM Import including designated DEIs • IATA Load Items Dictionary • IATA Seasons • IATA Reason Codes • IATA Service Types and payload option

Code Share Flights • Commercial and Code Share Flight Designators • Automatic flight creation with codeshare partner flight number Crew • Crew roles (subject to CrewLogic data feed) • Crew aircraft Composition Reports • Aircraft Weekly • Aircraft Statistics by season • Aircraft Fuel Burn - Average by Month, Aircraft Fuel Burn - Average by Route • Aircraft Rotations Report • Aircraft Utilisation Report and Graph • Aircraft Passenger Report (subject to external data feed) • Code Share Flight Reports • Flight Sector by Station • Flight Number by Date Period • Flight Number by Day • Freight Statistics • Timetable • Minimum connection time by airport • Minimum connection time by period • Flight arrivals and connection display within and outside of minimum connection time • Flight connections – HUB timetable • Flight Connections Map Display • Schedule Delay Report • Turnaround by airport • Responsibility and View Periods • Responsibility period - Flight Alerts • Responsibility period - IATA Messages • Responsibility period - Integration	• IATA Flight Number Compliance Miscellaneous Items • Electronic User Log • Airline designator Database • FIR Database • Fuel Type • Hotac Dictionary • Supplier Contacts Database Scenarios • Unlimited number of scenarios • Folders by Period • Graphical Display • Text Display • Flight sector and Flight Series creation, modify, cancellation and deletion wizardBatch update of flight designator, series type, service type, carrier, ACV version, Code share and DEIs • Synchronise with flights from production • Compare to another scenario • Export to another scenario • Compare to Production • Export to production • Duplicate/Merge scenarios • Extend weekly schedule • SSIM import in a scenario • SSIM export from a scenario • Automatic scenario back up Slots • SCR Creation and message generation • SCR by airport • SCR portfolio • Snapshot Status • historical slots management and control
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Services • Responsibility period - Scheduling/Operations • Responsibility period - Schedule External Publication Schedule Text Displays • Aircraft schedules and slots • Aircraft schedules by day with crew and briefs	• Submission Work Area • Memo • Status display • Slot handback Standstill • Standstill Creation, Modify and Deletion wizard for aircraft maintenance • Standstill types dictionary
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APPENDIX B CREWING FUNCTIONALITY

Features of CrewLogic	
Crew Data Crew Database including personal, availability, contract, crew hour, licence and qualification details Historical crew counter entry Crew acclimatisation Acclimatisation indicators Crew Requests Crew Requests & Preferences Crew Pairing and Roster Graphical Display Graphic Display of Pairings and Rosters Crew Reports Crew Records and Counters Crew Recent Experience Report Crew (EASA default) /Airline Company Duty and Flight Time Limits by 7, 14, 28 days 1 YR Crew Duty Limits Warning Report Crew Fatigue Management Crew Graphs Crew robustness report Crew Qualifications Crew Qualifications and Checks Crew Qualification Management Crew Training Crew Ground Training Crew Flight Training Crew Simulator Training Crew Transition Training Crew Standby's Crew Standby's Crew Positioning Crew Deadheadings, train, flight, road	Crew Pairings Crew Manual Pairing Generation Crew Automatic Pairing Generation Crew Rules Crew Rule Set EASA default Crew Configurable Rule Sets for your Company Rules Crew Rostering Crew Manual Rostering Crew Automatic Roster Generation Crew Roster Publication Crew Roster Changes Crew Roster Distribution by Email/SMS/CrewWebPortal/load/Paper Crew Swaps Dynamic rostered off days Local night indication Crew Optimisation and Establishment Planning Crew Automated Optimised Pairings Crew Automated Optimised Rostering Crew Multi Base Optimisation 1 months rostering for 2400 crew takes 11 hours Crew Check In and Reporting Crew Delayed Reporting Crew Check In Crew Check Out Crew Check In and Check Out adjustor Crew In-Flight Rest Crew In-flight Rest adjustment wizard CrewWebPortal Crew Pairing Cost Analysis Crew Recent Experience Crew Recent Experience by Type Crew Recent Experience by Airport Crew Tracking Last minute crew changes due to

Crew vacation Crew vacation management Crew Hotac and transfer booking list Crew Manual Hotac Crew Automated Hotac list Generation Ability to send Hotac booking list by email Hotac report showing booking stats by day Hotac report showing booking stats by role	absence Last minute crew changes due to delays Delayed reporting process
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APPENDIX C CREWCONNECT APP FUNCTIONALITY

Features of APM CrewConnect	
Crew Roster Crew Roster with Month, Week and Day calendar views Activities details Pending requests Vacations requests ratio indicator Crew Reminders Crew Bonuses Roster Changes Floating Action button	Crew Requests Crew Requests including Pairings, Flights, Destination, Stopover, Off and Absences. Vacations requests Crew Preferences Roster Swaps Crew Status Holiday request on blank days Ranking system for requests management
Crew Data Crew Data including personal information, addresses, licences, contacts and passports	Crew Qualifications Crew Checks, Recency and Attributes Crew Qualifications form Scan and upload documents to check events
Airline Information General information Company links Flight Schedule	Crew Directory Crew Members list Contact details
Crew Reports EASA Record Report Log Book General Declaration	FlightLog edition Flight times Flying crew Approach types Fuel info and uplift
Push notifications for roster changes, new published rosters, swap proposals and requests updates	Miscellaneous Whatsapp for CrewConnect Check-in: crew clocks in upon arriving at the briefing room Calendar synchronisation UTC, Crew base or user device time zone Offline mode Dark mode enabled
In-app alerts For crew checks, licenses and passports about to expire	

APPENDIX D OPS FUNCTIONALITY

Our operations management module SmartOps, provides you with real-time information at your fingertips. This is a day-of operation flight management tool that helps you make instant decisions that minimise delay and keep your flight on time.

Features of SmartOps	
Aircraft Aircraft Type and Sub Type Database Aircraft Registration Database Aircraft Configuration Database Aircraft Route Database Aircraft Block and Burn Database ETE Edition Aircraft Overflight Export Database Aircraft flight type dictionary by series and sector with related cost attributes Aircraft Payload Calculations Aircraft defect management, including operational and maintenance limitations Duplicate aircraft wizard for creation of new company or leased aircraft	Miscellaneous Items Electronic User Log Flight Designator Database FIR Database Fuel Type Fuel Uplift by airport Hotac Dictionary Ops Event Codes Payload dictionary Supplier Contacts Database VIP on board indicator Management of Commercial Segments Zero fuel weight - calculates indicative/estimated figures Workflow Task process for shift handover
Airports Airport Database Airport Region Database Airport Default Terminal Wizard Time Zone Database including IATA seasons	Reports Report – Aircraft Weekly Report - Aircraft Statistics by season Reports – Aircraft Fuel Burn -Average by Month, Average by Route Report – Aircraft Rotations Report Report – Aircraft Utilisation Report and Graph Report – Aircraft Passenger Report (subject to external data feed) Reports- Flight Sector by Station Report – Flight Number by Date Period Report – Flight Number by Day Report – Freight Statistics Report – MCT By Airport Report – MCT by Period Report – Flight arrivals and connection display within and outside of MCT
Air Traffic Control ATC Flight Number Rules Dictionary ATC Flight Number Generation by IATA season/Period ATC Message Generation	
Audit and History Flight Sector History	
Crew Crew Roles (subject to CrewLogic data feed) Crew Aircraft Composition Show max flight duty indicator	

(subject to CrewLogic data feed) worst case Show max flight duty indicator (subject to CrewLogic data feed) captain Show crew rest margin indicator	Report – Schedule Delay Report Report – Flight Delays Report – Fuel Consumption Report – Carbon Emission Report – Turnaround by airport Report – Zero Fuel Weight Report – Daily Ops Report – Daily Ops Extended Report- Post Flight Report -Flight Documents (fed from Crew Logic) Briefing, Gen Dec, APIS etc Report – Flight Notification advice Report Sector Briefs and Memos Reports of GUI displays Reports -Voyage Report
Graphical Displays Graphical Display of aircraft schedules and slots with ATC Flight numbers ATC flight plan status indicators A/C door indicators Graphical Display of aircraft schedules and slots with Commercial Flight numbers Graphical Display of aircraft schedules and slots with IATA airport codes Graphical Display of aircraft schedules and slots with ICAO airport codes Graphical Display of aircraft punctuality status from IATA messages or manual Graphical Display of a delayed sector and impact on subsequent flights Graphical Display of aircraft in departure and arrival order Display of original commercial schedule vv revised operation schedule Display of aircraft maintenance status Real Time OTP indicators	Responsibility and View Periods Responsibility period - Flight Alerts Responsibility period - IATA Messages Responsibility period - Integration Services Responsibility period - Scheduling/Operations
Intuitive Function Wizards Flight sector and Flight Series creation, modify, cancellation and deletion wizard Batch update of flight designator, series type, service type, carrier, ACV version, Code share Memos (notes) on a Flight Series Briefs (notes) on a Flight Sector	Operational text display Tabular Display of aircraft schedules and slots Tabular display of aircraft schedules by day with crew and briefs Grid Display of Operations Dep On time screen Arr On time screen

Quick Search function Flight Sector Clearance function Flight Sector Alerts and limitation displays Automatic flight creation with codeshare partner flight number Disruption costs calculation wizard Fleet assignment optimiser	
IATA Standards and Messages IATA ASM Generation IATA SSIM Export IATA Load Items Dictionary IATA Seasons IATA Reason Codes IATA Delay codes IATA Service Types and payload option ATC/CFMU Messages, FCM,SPA, RFI, SRJ,SWM, DLA, CN, RQP MVT Messages AD, AA, DL, NI, EO,RR, RQM, SAM DIV, (incl Pax and EA at Div Apt) AAS Messages (incl Est and Booked Pax) in UTC and LT Aircraft Switch and delay Message Aircraft Deployment Messages ICAO flight plan ingest Flight Report Processing via SITA or email	Scenarios –Sandbox Sandbox Scenario – Graphical Display Sandbox Scenarios- - Flight sector and Flight Series creation, modify, cancellation and deletion wizard Sandbox Changes to Live Display Sandbox Scenario- Export Recovery optimiser
	Slots Slots - SCR Creation and message generation Slots – SCR by airport Slots – Memo Slots – Status display Slot Message generation
	Standstill Standstill Creation, Modify and Deletion wizard for aircraft maintenance Towing indicator to and from standstill

All our software packages include regular updates and we aim for 2 releases per year. Please contact us for more information or to arrange a demonstration.

APPENDIX F OPSCONNECT APP FUNCTIONALITY

Features of APM OpsConnect	
Graphical Displays Gantt View Aircraft list view Search function Flight Status indicators Overbooking/Underbooking Passenger/Cargo information Standstill types	Sector Information Flight times/OOOI Aircraft information Payload: Passenger and cargo details Departure Comments Terminals and Gates Delay information Crew Members, Additional Flight/Ground crew and DHD Crew
Sector Briefs (Notes) Commercial Operational Logistic Passenger Catering TransOp Handling agent	Sector Memos Commercial Operational Logistics
Standstill Information Schedule including towing times Standstill service type Standstill description Aircraft information	Standstill Briefs Operational Logistics
Reference time zone Airport local	Miscellaneous Offline mode Dark mode enabled

APPENDIX G IATA AND MESSAGING FUNCTIONALITY

APM accepted messages	
Air Traffic Control • CFMU Incoming ACK messages are ingested • CFMU Outgoing CNL messages are generated on demand • CFMU Incoming DES messages are ingested and update flight data • CFMU Outgoing DLA messages are generated on demand • CFMU Outgoing FCM messages are generated on demand • CFMU Incoming FLS messages are ingested and update flight data • CFMU Incoming FPL messages are ingested • CFMU Incoming MAN messages are ingested • CFMU Incoming REJ messages are ingested • CFMU Outgoing RFI messages are generated on demand • CFMU Outgoing RQP messages are generated on demand • CFMU Incoming SAM messages are ingested and update flight data • CFMU Incoming SIP messages are ingested and update flight data • CFMU Incoming SLC messages are ingested and update flight data • CFMU Outgoing SPA messages are generated on demand • CFMU Outgoing SRJ messages are generated on demand • CFMU Incoming SRM messages are ingested and update flight data • CFMU Outgoing SWM messages are generated on demand Crew • APIS Outgoing UK, US, Brazil, Canada, South Africa, France, Denmark, Russia and China Flight Crew Manifest are generated on demand by a service. ICAO APIS standard messages can be configured on demand. • SMS to crew members	Operations • DIV Outgoing DIV messages are generated on demand • MVA Incoming MVA messages (ACARS messages converted into MVT equivalent messages) are ingested and automatically update flight sector data • MVT Outgoing MVT messages are automatically generated on demand • MVT Incoming MVT messages are ingested and automatically update flight sector data • MVT SI FOB messages are ingested and automatically update flight sector data • In addition, APM can ingest some Acars messages if they are converted into XML messages (APM can supply a XML schema for this purpose) • ACARS A80 Flight Summary Message • ACARS Aircraft Doors opening and closing messages are ingested and automatically update flight sector data • RQM Outgoing RQM messages are generated on demand • AAS Outgoing AAS messages are generated on demand • ADM Outgoing ADM Aircraft Deployment messages are generated on demand • ASD Outgoing ASD Aircraft switch and delay message • FMM Fuel Monitoring Message. Incoming messages are ingested • Sub charter notification Slots • SCR Incoming messages are ingested and update slot data • SAL Incoming messages are ingested and update slot data • SCR Incoming messages are ingested and update slot data

Schedule messages • ASM Incoming ASMs are stored in the APM database but do not update the flight program without configuration • ASM Outgoing ASM's are generated on demand from SmartOps -NEW, TIM, CON, FLT, CNL, RIN, EQT, RPL (these can also be automatically generated and transmitted through the ASM Export Service). • SSM Outgoing SSM's are generated and sent on demand • SSIM Outgoing SSIM's are generated on demand • SSIM Incoming SSIM's are ingested on demand (these can also be automatically ingested by using the SSIM Import Service)	• SCR Outgoing messages are generated on demand • SHL Incoming messages are ingested and update slot data • SIR Incoming messages are ingested and update slot data • SMA Outgoing messages are generated on demand • SAQ Outgoing messages are generated on demand Payload Control • CPM Cargo Ingest. Incoming messages are ingested. • LDM Incoming LDM messages are ingested and update pax data SLS Incoming incl Actual Pax F,C,Y, GG (free),B (Baggage),E (Palleted Frt), C (Loose Cargo), M (Mail)
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