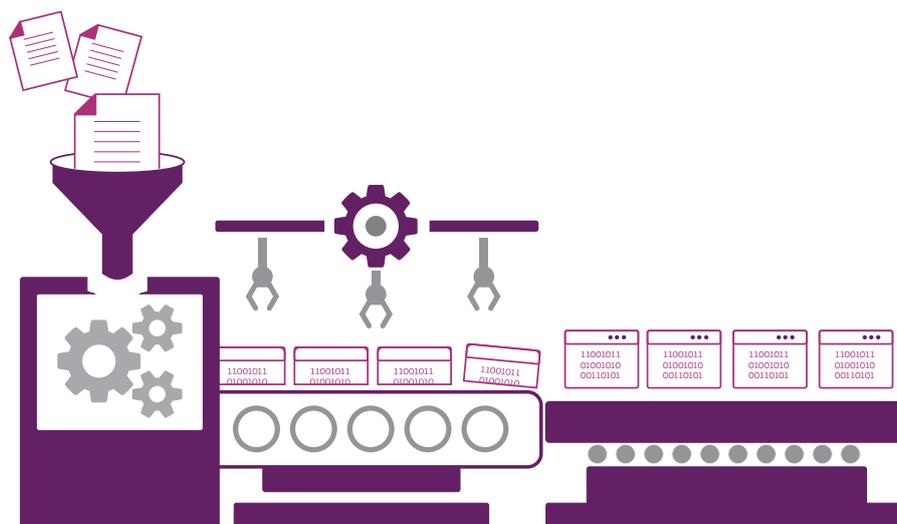


# Data Exchange is Coming!



GroupEAD

## WINTER IS COMING!

“Winter is coming” is a popular saying originated in one of the most successful television series of all time: “Game of Thrones”. The phrase is now commonly used in a cynical way to say that something challenging is about to happen, just like winter.

In the TV show, the characters were referring to this expression for creating consciousness on others that they had to be prepared for a change of era, a new time with important challenges in their lives.

***Isn't a “big change” what we are also expecting for the Aeronautical Information Service?***

***What are we doing for getting prepared for “winter”? or in our language, getting prepared for Data Exchange?***

For decades, the Aeronautical Information Service has been provided with limited and obsolete resources which are not in line with the technology available today. While other industries have quickly fostered automation and implemented digital means for exchanging information, in AIS we continue using paper products and telex-based networks for the exchange of information.

In the last years many efforts have been made to facilitate the “modernization” of AIS; from updates of the applicable regulatory documentation, to regional and national programmes for implementation,

and although we see progress in some countries, the reality is that many others are still struggling to align with the new requirements.

Quite for sure, such a big change in AIS, does not only require defining the new provisions in the relevant ICAO documentation but it also implies a global effort by all parties in the data/information chain, from originators to end users.

**“The first step towards getting somewhere is to decide that you are not going to stay where you are”**

J.P. Morgan

As stated by Morgan, the action of moving to a different place needs first to occur in our minds embracing a decision to change.

The above is also true for AIS. In order to bring the service to the next level of perfor-

mance, we must recognize that we need to change and decide to move forward. A new mindset towards data should then be highly promoted among all the involved stakeholders.

“Data” is the keyword here and we must orient our efforts towards implementation of everything related to it, such as: data management, data collection, data storage, data validation, data security, database administration, data quality assurance, data backup and protection, data analysis or data exchange.

Interestingly, there are already new generations of AIS

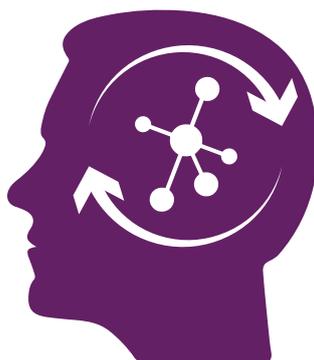
Staff who are “digital natives” and who might be ready enough for this new era of Data in AIS, but still a bigger effort is required at an organizational level.

***Are we in AIS promoting a data mindset internally and among our providers and users?***

## FROM AIS TO AIM

More than a decade ago, ICAO developed the first roadmap to support States to move from a product-centric to a data-centric environment and since then a new page in the AIS history is being written.

But as we could have foreseen some years ago, “The transition from AIS to AIM” has



Stage	Lever of Automation	Products	Distribution	Prevailing concepts	Main references	Period
AIS (Product Centric)	0 Manual	<ul style="list-style-type: none"> <li>Manual Processing</li> <li>AIP, Charts, NOTAM</li> </ul>	<ul style="list-style-type: none"> <li>Paper</li> <li>AFS</li> </ul>	<ul style="list-style-type: none"> <li>Decoupled AIS Units operations</li> <li>QMS implementation</li> </ul>	<ul style="list-style-type: none"> <li>Annex 15 (ed. 13)</li> <li>Doc. 8126 (ed. 6)</li> </ul>	< 2013
AIM 1.0 (Data Management)	1 Data centric	<ul style="list-style-type: none"> <li>Semi-automatic production</li> <li>eAIP</li> <li>eCharts</li> <li>eTOD</li> </ul>	<ul style="list-style-type: none"> <li>CD</li> <li>PDF</li> <li>Web</li> </ul>	<ul style="list-style-type: none"> <li>Databases</li> <li>Data validation</li> </ul>	<ul style="list-style-type: none"> <li>Annex 15 (ed. 15), Doc. 8126 (ed. 6)</li> <li>Roadmap for the transition from AIS to AIM</li> </ul>	2013-2018
AIM 2.0 (Data Centric)	2 Automated workflow	<ul style="list-style-type: none"> <li>Digital Data Sets</li> <li>Digital NOTAM</li> </ul>	<ul style="list-style-type: none"> <li>AIXM</li> <li>DTM</li> <li>Data Services</li> </ul>	<ul style="list-style-type: none"> <li>Digital Data Exchange</li> <li>Data Quality Assurance</li> </ul>	<ul style="list-style-type: none"> <li>Annex 15 (ed. 16), Doc. 8126 (ed. 6)</li> <li>Doc. 10066 (PANS-AIM)</li> <li>EUROCAE (e.g. ED 99D)</li> <li>ASBU (DAIM Block 1)</li> </ul>	2019-2024
AIM 3.0 (Service Integration)	3 Full AIM Integration	<ul style="list-style-type: none"> <li>Data services</li> <li>Enhanced coverage (e.g. Network, UTM, Higher Airspace)</li> </ul>	<ul style="list-style-type: none"> <li>SWIM (AIM, MET and F&amp;F)</li> <li>SOA</li> <li>Web Services</li> </ul>	<ul style="list-style-type: none"> <li>Data/Information services</li> <li>On-demand request of data</li> </ul>	<ul style="list-style-type: none"> <li>ICAO and Industry</li> <li>ASBU (DAIM Block 2)</li> </ul>	2025-2030
AIM 4.0 (Service Virtualization)	3 Full AIM Integration	<ul style="list-style-type: none"> <li>Data services</li> <li>Full aeronautical information coverage</li> </ul>	<ul style="list-style-type: none"> <li>SWIM (AIM, MET and F&amp;F)</li> <li>SOA</li> <li>Web Services</li> <li>Air/Ground (safety critical)</li> </ul>	<ul style="list-style-type: none"> <li>Data service providers</li> <li>Virtualisation</li> </ul>	<ul style="list-style-type: none"> <li>ICAO and Industry</li> <li>ASBU (SWIM Block 3)</li> </ul>	> 2037



been only the beginning of a longer journey with more ambitious objectives for aviation. This movement for digitalization of the AIS has been also the trigger of the SWIM concept, where Aeronautical Data will be seamlessly exchanged together with other domain's data such as the Meteorological Data and Flight and Flow Data.

These parallel developments of other domains are obviously impacting the initial goals established for AIM and we now must make sure that we are not only the pioneers but that we take also the lead in this new journey towards a full data service provision in aviation.

## AIM STAGES

Although there is not an official classification or stages for AIM, the AIM community has recognized some characteristics, such as: level of automation, type of products and distribution, etc.; which might be a good starting point in order to establish a stepwise strategy for an appropriate implementation.

The table above provides guidance on the main characteristics for our vision of the different AIM stages.

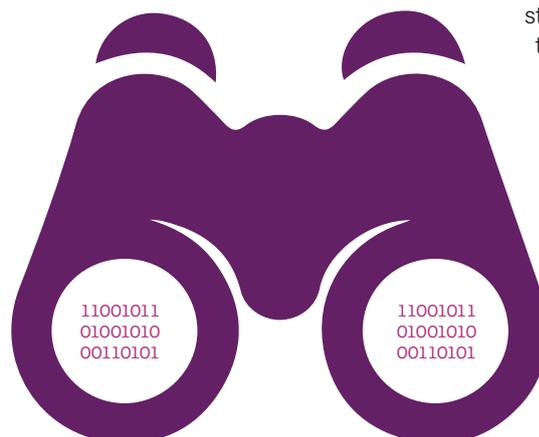
## AIM 1.0

Some might have started already this roadmap with the implementation of an AIM system which is indeed of great support for the creation of conventional AIS products such as the AIP/eAIP and Charts, but unfortunately ... this is not enough.

***If we use a database for the creation of the same conventional products ... what has really changed for the user?***

AIM 1.0 brings along an improvement of the quality of the conventional AIS products supported by the use of databases, but for some users this might have gone unnoticed and they may have not even realized that a change in AIS has occurred since the format of the information provided to them has not really changed.

Reaching the AIM 1.0 stage is a great step forward, but it is just the first step. Much more is required in order to be ready for future demands.



## DATA EXCHANGE IS COMING!

Just like in the TV Series Game of Thrones where "Winter is coming", in Aeronautical Information ... Data Exchange is coming!

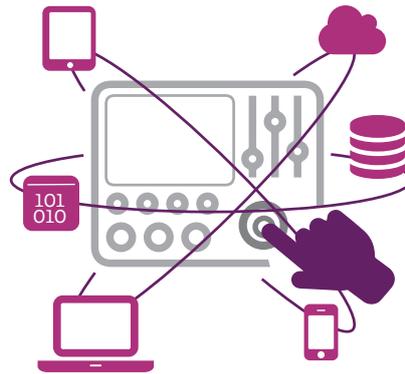
But please, don't get intimidated with this statement, this is just a fact that nobody can avoid or prevent and we should take this only as a heads-up for being prepared when the time comes.

In the same way that we cannot control an ocean wave coming directly to us, we cannot change the fact that digitalization is everywhere now and that we are actually a bit late in its implementation. So, we'd rather start now learning how to surf and enjoy the ride and the views of a beautiful beach.

The users nowadays are demanding more from us, they don't want to be attached to a pre-defined presentation of the information, they actually want to create their own layouts and use their own visualization tools and for this, their requirement is simple, they demand relevant, timely and quality assured data.

## IMPLEMENTING AIM 2.0 AND BEYOND

AIM 2.0 and beyond is all about collecting and exchanging data and data products. This requires keeping the data integrity from the origination, through the AIS and then finally delivered to the end user, which is definitely a big change in the way we have been providing our service.



The users, in these later stages of AIM, will be encouraged to use and transform the data in order to satisfy their own needs. For example, they will use data for on demand graphical representation of aeronautical features or will perform analysis of the data for statistical or scientific purposes.

***An Aeronautical Data exchange will open a whole new world of possibilities for the AIS and more importantly, for the users.***

Human resources will still be key for the new services, but of course, we need to be prepared and embrace the change.

Although the technologies required for these stages are well advanced, still the manufacturing industry is day by day making progress in order to clear up the way for data exchange implementation addressing those issues which still need to be further tested and assured.

## EAD - DATA EXCHANGE SINCE 2003

A great example and proof of concept that data exchange is feasible is the EAD, the European AIS Database.

Owned by EUROCONTROL and established in 2003 was the first implementation of the AIXM model with the whole objective of providing harmonized aeronautical data in a structured digital form to users. Today and after more than 18 years, there are more than 50 different Data Providers and hundreds of Data Users using the EAD around the world providing and receiving aeronautical data on a daily basis on a truly AIM Data Exchange environment.



## Need help implementing any AIM stage?

New concepts, references and even types of distribution of our products and services are now part of the game and quite a big challenge for the AIS Community.

***How to keep our knowledge up with the new concepts and technologies?  
What is the best strategy for the implementation of any AIM stage?***

GroupEAD has successfully supported EUROCONTROL since the very beginning of the EAD implementation in 2003 by running the operational administration of the database. We strongly believe that the implementation of any AIM stage in any organization can benefit from GroupEAD's extensive experience in all the different fields of the aeronautical data management.

**Contact us at [info@groupead.com](mailto:info@groupead.com) and let's define together an efficient and successful roadmap towards implementation of any stage of AIM in your organization.**



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