

Demystifying AIM

Is it “Aeronautical Information *Mystery*” for you or your colleagues? Keep calm and carry on, because this article will hopefully demystify AIM.

Aeronautical Information Mystery

AIM stands for Aeronautical Information Management. OK, you knew this already. But what does it mean for you, for your organisation, and for the aviation sector in your country?

For a start, there is the ICAO Annex 15 definition of AIM:

“The dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.”

In essence, aeronautical information is becoming *digital*, it is *exchanged* and its *management* should be *dynamic*, *integrated*, and *collaborative*.

What is new here? Not **management**: Aeronautical Information Services have always been managed. **Dynamic**? No, NOTAM have existed for about a century. **Integrated**? The concept of Integrated Aeronautical Information Package was already introduced in ICAO Annex 15 in 1991. **Collaboration**, perhaps? Still not: AIS officers routinely discuss changes with data providers and data users. **Exchange**, then? Not really: information flows both ways between

AIS, data providers, and data users, in any functioning national aviation system. Granted, all these pre-existing concepts could work better and the aim (pardon the pun) is to improve the aeronautical information workflow.

What is really new is **digital**. What AIM is all about is the **digitalisation** of the aeronautical information process. That is, quite simply, the use of computers to manage aeronautical information. Mystery solved?

Not so fast! AIS around the world didn't discover computers in 2018. AIPs have been published in PDF format since the 1990s. NOTAM have been electronic since the introduction of AFTN in the 1980s. So what are we missing?

AIM is the digitalisation of aeronautical information itself, and of its whole workflow, not just of how we build AIS products. The goal is to enable *all parties* to process this information and contribute to the AIS data chain. In contrast, the PDF file format was designed so that documents could be printed on any printer, and displayed on any computer screen, and look reasonably the same. It was not designed to store data and let users process this data. Anyone who has



tried to extract obstacle coordinates from PDF AIPs from several countries knows that it's difficult and error-prone. The same story goes with NOTAM, which are difficult to read for us humans and yet not precise enough for computers.

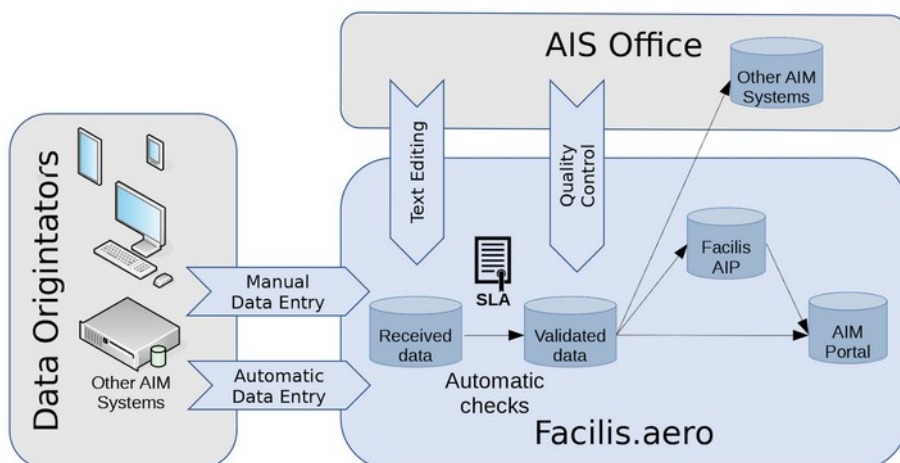
An AIM system, on the other hand, can be user-friendly and yet efficient for software processing. An AIM system does not assume that AIP data will be printed on paper, or that urgent messages will be transmitted over TELEX lines. Instead, an AIM system offers structured data with clear interfaces, so that data can be both presented to human users and processed by various systems, including those that haven't been invented yet.

Fair enough, but why would you want to digitalise your AIS process?

To AIM or not AIM, that is the question!

Why should States make the transition from AIS to AIM? A simple answer is “because ICAO says so.” ICAO recommends States to implement AIM since the release of Annex 15 Edition 16 in 2018. But what's in it for you, for us?

For **AIS Officers**, AIM enhances job satisfaction. The main practical advantage is having access to more efficient software tools with **more automation**, allowing them to focus on their core tasks: providing complete, accurate, timely information to data users. Along with AIM comes a focus on human factors and quality management systems, and enhanced collaboration. With modern tools and new concepts, training is essential,



which revalorise AIS officers and the AIS position as the central nervous system of ATM.

CAAs, ANSPs and the aviation community in general benefit from this efficiency by seeing greater data quality in all its aspects: “accuracy, resolution, integrity, traceability, timeliness, completeness and format”, as PANS-AIM puts it, to which I would add relevance. Consequently, AIM helps reduce costs, but also strengthens safety, and that’s our common paramount goal in this industry.

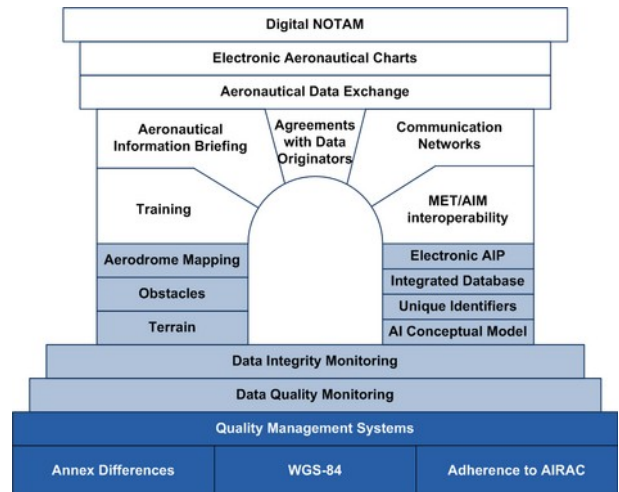
Keep calm and Implement AIM

Now that you know what AIM is, and why you would implement it, how do you proceed? ICAO offers two responses to this question: First, the Roadmap for the Transition from AIS to AIM. Second, the GANP.

The Roadmap presents 21 steps, organised in 3 phases: see the daunting “AIM

triumphal arch”, made by ICAO. Some step definitions are vague, or even questionable, but it was a good start. To make things more complicated, there comes the Global Air Navigation Plan (GANP) 6th Edition, divided in 4 levels, where level 2 includes the Aviation System Block Upgrades (ASBU). The 5 phases within ASBU are called blocks, not phases, and start at 0, not 1. ASBU contains 22 threads, 4 of which under the information topic, notably Digital AIM (DAIM). Steps within threads are called elements. Still with me? OK, let’s put all this aside and **let’s follow a much more practical approach** to your transition to AIM.

But first, you may want to read below the testimony of Mr Kyaw Thet Khine, AIM System Administrator for the Myanmar Department of Civil Aviation. Their



transition from AIS to AIM started in late 2015 and is currently on hold, but it is an interesting experience from the perspective of a country with limited resources.

Where do we start?

The good news is that your State has probably started already, because some steps have been discussed at local, regional and global levels over the last 30 years. For instance, WGS84, ICAO An-

My AIS to AIM experience

By Mr Kyaw Thet Khine, AIM System Administrator, Myanmar DCA

“I worked as an ATC for exactly nine years, with some IT experience but not strong. In 2015, I moved to AIS, which had then just started migrating to AIM. Along with AIS colleagues, I took AIM System Administration Training in Germany and observed AIM operator training such as Electronic AIP, Charting, NOTAM, Flight Planning and Briefing. At that time, I really didn’t know the standard operating procedures of traditional AIS. After my colleagues and I had taken eAIP training, we migrated the paper AIP of more than 500 pages into eAIP, firstly under the mentorship of our AIM consultant, Mr Benoit Maisonnny. My colleagues were assigned with different AIP pages such as GEN 1.1, ENR 3.1 and AD 2.2. It took about 6 months to finish the Electronic AIP and successfully publish the eAIP website.

As part of our AIM transition, we assured data quality and operating procedures with ISO 9001-2015. In the meantime, I took IT courses, such as Linux Administration, to improve myself and to work better in the AIM environment, because

eAIP Software and other related software are running on the Linux platform. I followed the official manual of the vendor such as backing up and restoring the database, troubleshooting the software and other tasks. Then I took NOTAM, Flight Planning, Briefing and Charting Courses. About a year later, I began to understand the standard operating procedures of these AIS functions by using the AIM system and I became better and smarter at work. I answered questions from my colleagues related to AIM and solved issues faced by operators, as well as technical issues. I self-studied from Eurocontrol documents (*Guidelines on Aeronautical Data Process* and *Guidelines for Operating Procedures for AIS Dynamic Data*) and ICAO Annexes and Documents referenced by the software vendor.

In fact, AIM is not to be afraid of. AIM enables traditional AIS to work smarter and better, and enhance data quality, integrity and interoperability among data warehouses, other state AIS offices, ATM and FMS. In the beginning, my colleagues only had basic IT skills such as Microsoft Office, email and Facebook. We managed to migrate to AIM successfully, but we wouldn’t have done it successfully without the AIM consultant who helped and guided us in the whole AIM Transition process. It is my true story indeed!”

nex differences and adherence to AIRAC are not new.

The **first action** to take is for the Head of AIS and key AIS personnel (ideally, all the team) to **learn about AIM**. That can be done without cost by reading ICAO material. Be prepared to dedicate a few weeks for this, and don't be afraid to get lost at times. A quicker method, still affordable, is to organise a workshop for the AIS team, with an AIM consulting company such as Nilacandi. In 2 days, the whole AIS department can be brought up to speed with what is AIM. We support the AIS department in drafting their custom transition plan. Each organisation has its own goals, its own assessment of the current situation, its own priorities, and therefore its own AIS digitalisation plan.

Where to start with AIM?

1. You already started!
2. Learn: AIM workshop
3. Draft your transition plan
4. Collect electronic data
5. Distribute data
6. Implement digital products

I advise not to follow the Roadmap in the same order as suggested by ICAO.



Benoit Maisonnay
Founder and Senior AIM Consultant, Nilacandi
benoit.maisonnay@nilacandi.com

Benoit Maisonnay has 22 years of experience in aeronautical information and a background in computer science. He founded Nilacandi in 2014 to assist AIS around the world in their digital transformation to AIM. Nilacandi is specialised in AIM, offering migration services, training, consulting, and an AIM software suite on the Cloud.



Once foundation steps are implemented, I suggest **starting digitalisation at the origin**, by collecting aeronautical data electronically. There is no point in digitalising AIS products if the input data is not already of high quality. Remember why you do AIS: it is not to build a website, but to distribute the right data to data users. Data users would rather get quality information, whatever the format, rather than a fancy shiny but outdated eAIP with typos and contradictions.

A **second stage** that Nilacandi proposes to AIS departments is **reliable data publication**. What's the point of having an AIM website if it is unreliable, out-of-date, and insecure? Our Facilis AIM Portal is one solution to this issue.

Thereafter, other steps of the AIM Roadmap such as eAIP and eCharts can be considered. Finally, some steps in the Roadmap are still too early to be implemented and can be completely ignored for the time being. That's certainly the case for digital NOTAM.

Challenges

In my 22 years of experience in implementing AIM projects, and 10 years before that digitalising other domains, I have seen organisations facing typical challenges: some were lacking good IT

staff, many didn't train their staff, or not enough, and most didn't have the necessary budget. Despite all this, most AIS succeeded. There is one common mistake done by those who failed: they believed that software would solve all their problems. Digitalisation is about computers, right? So why shouldn't it be enough to just shove a couple of glossy servers and workstations in the office? That's because **digitalisation is about change management**, not just about computers. *People* need to learn new concepts, new modes of operations, not just new software. At Nilacandi, we first teach users how AIM affects their job. Software usage then comes naturally after that.

**

My goal with this article was to demystify AIM and show that it is what the rest of the world calls digitalisation: the use of computer tools to structure and process aeronautical data. **Making the first step** towards AIM only requires a 2-day workshop. This helps define a custom transition plan, including priorities and budget. The first tool to put in place is for the collection of data from data providers. Then, the publication of this data for data users.

Feel free to contact me to start your AIM journey!



Meet Nilacandi at the Global AIM Congress 2023 in Cairo:

- Check out Facilis.aero at the exhibition area
- Attend our presentation on the first day, "Aeronautical data governance from origin to distribution".