



**ALBATROSS**  
THE ATM OPEN SOURCE COMMUNITY

W H I T E P A P E R

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“It is in the DNA”:  
How to induce Change and  
Innovation in the ATM Industry

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## Introduction

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The Albatross™ Open Source community project is a key initiative to boost innovation in the ATM industry. This whitepaper discusses the market conditions and industry factors that have brought about this highly disruptive, yet critically necessary change in the ATM industry's approach to technology development.

The founder of the Albatross project is Skysoft-ATM's Manager, Didier Berling. From its start in 2001, Mr. Berling and his development team built ATM software products based on the vision that it was possible to create solutions that were of higher performance and compatible with commodity hardware. The realization of this vision resulted in a change in market dynamics, and brought more flexible, lower cost solutions to the ATM operators.

This vision and philosophy has in its roots a desire to facilitate positive change to the aviation industry. The Albatross project is a continuation of that vision and philosophy, and will now benefit and bring positive change to the aviation industry again, through an Open Source collaborative platform.

Skysoft-ATM is a strong believer in the key role Albatross can play in facilitating our industry and encourages all professionals to access and contribute to the technologies made available under the Albatross project.

Skysoft-ATM aims to encourage a new era of cooperation of ATM users, manufacturers, developers, regulators and academics to contribute to more open and cost-efficient ATM solutions, for a more secure airspace and to better service the global airport sector.

## The ATM Market and the Software Maturity Model

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The current ATM market has all the characteristics of a niche market. If we look at the supplier side of the ATM marketplace, we see a limited number of players specialized in surveillance products. This is also true the other way around; where the potential customer base is relatively limited. There is not enough mass effect to easily generate the introduction of innovation into the ATM market, where the initial technical investment required to produce a new system is relatively very high compared to the potential return on investment. Because of the high costs involved, marketed solutions are aimed at the larger ATM operations. This leaves smaller operations such as regional and small airports, or other commercial operations, in need of ATM services and without appropriate cost-effective solutions.

An additional impact of the current negative market dynamics is that the level of standardization across user techniques and API's is low. When not driven by regulators, vendors are slow in agreeing on interoperability issues, because that would open a captive market.

As is the case in the general IT market, there is a direct link between the software maturity cycle and Open Source benefits. The more mature or commoditized a software component, the bigger the potential benefit for an Open Source approach. One can identify ATM software components/ layers that are used by all and have a very well defined functionality in the ATM surveillance chain. These are, therefore, some of the highest potential candidate projects to benefit from unified open standards and a more collaborative development approach.



The ATM industry, its regulators and other industry segments are now accelerating their adoption of the same Open Source initiatives that have demonstrated huge benefits to the broader IT industry and marketplace. The ATM industry's move toward Open Source is a clear result of the need for faster innovation, lower costs, and increased software flexibility.

## Open Source: A Collaborative Approach for Better ATM Solutions

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Open Source is the generic term for software that is distributed in its source code form with a license that allows the recipient to use and modify this code. The concept of source code distribution is not new, but in the last few years, fuelled by the Internet, a huge Open Source momentum has developed. Open Source continues to ever-increasingly penetrate deeply into all sectors of the industry.

The fundamental reason behind the success of Open Source in the wider IT industry is very simple: When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, and people fix bugs.

Some of the net benefits of Open Source are the driving of open standards, better quality software, faster innovation, increased interoperability, reduced cost, and providing collaborative development platforms through stimulation and invigoration of developer communities.

Skysoft-ATM believe that by changing the model and introducing a managed platform where ATM software/ ideas/ approaches can be shared will have a positive impact on innovation and will provide a more open and rapid standardizing process where required.

Creating an Open Source community presents not only the opportunity to share code but also of sharing algorithms, ideas, methods of projection, statistics, and design approaches. In this respect, a scientific and performance-oriented contribution tends to prevail over political aspects. This would unify methodologies and computations in various solutions. Open Source permits an open selection of the most performing solution (contributions).

The key to capturing innovation and accelerating the regulation and standardization process - without compromising on safety and security - will be provided by good and efficient community governance that will set clear directions and guidelines.

Open Standards also play a very important role. Open Source Software needs standards, otherwise it is difficult to foster a community. It is also problematic to attempt to develop the eco-system effect without the interoperability that standards bring about. Open Source is the best guarantee that if open standards or regulations exist, they will be used and applied. Furthermore, or if there is an opportunity to create a standard or regulation it will more likely be undertaken within an Open Source environment.



SkySoft-ATM strongly believes that there is room for technology consolidation in the different software layers used by ATM operators. The collective energy used by proprietary ATM technology vendors or organizations with in-house developed ATM solutions to each develop and maintain their respective products - that basically provide the same functionality - could be better used for added value developments.

It is not only the cost element for ATM technology vendors and ATM operators that will drive the movement: greater regulations and safety requirements will also play a significant role so that vendors will need to work together in a more transparent way. The systems, or more accurately, software components will have to be highly interoperable. The most effective catalyst for initiating and ensuring this process is an Open Source approach.

## Albatross

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SkySoft-ATM is changing the model by making available to the Albatross platform the first ATM-focused Open Source collaborative development community.

In a first step the Albatross platform is providing key community services and introducing the development team behind the initiative. SkySoft-ATM is providing resources to manage the platform and animate the community: this includes processes, documentation, and agreements to ensure safety and security requirements are met in full.

Contributor agreements are available on the site, as well as an animated forum to start sharing ideas, topics and other project initiatives.

In a second step, Albatross will release a first GPL code based project in the ATC radar display field. The project to be released under this initiative will be the Albatross Display™; an advanced, flexible ATC radar display solution that will be based on a SkySoft-ATM software donation to be made available in June 2009. This project will be lead by SkySoft-ATM software engineers, and will be open for contribution by collaboration.

Additional Open Source projects are in the pipeline, and with input of the Albatross community using open source governance, a project release plan will be communicated in the near future.

SkySoft-ATM welcomes all professional ATM industry actors and software developers to participate in this exciting initiative and help forge a vibrant community.

## Certified and supported ATM solutions

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SkySoft-ATM plans to offer Enterprise versions - which are Certified and supported ATM products - to the market based on the Albatross community projects. To achieve this, it will implement a rigorous development life-cycle management, documentation and testing process to productize the software and documentation to the required safety requirements.



These products and services will be available to ATM Operators and ATM technology vendors on a commercial subscription base with different service levels available.

The first planned commercially available product will be based on the Albtross community project Albatross Display™. This enterprise version will be tested, documented, certified, and come with full professional support services that will be made available through a subscription from Skysoft-ATM in late 2009.

As the Albatross community and projects develop we will see both community and industry versions increasingly being made available to the industry. This will lead to an increase in adoption from the industry of commercially backed, supported, and tested solutions based on the community collaborative development platform.

## Conclusion

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The change brought by open source will bring needed benefits in the ATM industries software development model. The Albatross community project directly addresses that need, and will ultimately have a disruptive, but extremely positive effect on the ATM industry as a result of introducing more open standards, better quality software, faster innovation, increased interoperability, and reduced cost.

All industry players are invited to join and contribute. The project is now live on the Albatross Community website. To get involved or learn more about the Albatross community project, please visit: [www.albatross.aero](http://www.albatross.aero)