

SkyLink Protocol (SKLP)

A Blockchain-Powered Platform for Aviation
Transparency and Tracking

BACKGROUND AND PROBLEM

Boeing has been selected as the company for which SkyLink will present a blockchain-based solution to. This company has been in a deep crisis which affected its reputation in an extremely negative way. It has faced countless accusations and huge legal and regulatory challenges, including lawsuits, fines, and settlements related to two fatal incidents linked to their aircrafts.

The primary problem that Boeing is facing in the market lies in the erosion of customer trust in them due to **lack of transparency** regarding their aircrafts which also resulted in the fatal incidents of 2018/2019. These incidents were linked to the flawed design of the flight control system known as MCAS which was used in their 737 MAX aircraft [\[1\]](#).

According to Polaris Market Research, the global aircraft manufacturing industry was worth around \$414Bn in 2021 [\[2\]](#). It's also worth to note that this valuation is less than the valuation of that in the year 2019, and this is because the market has suffered from a steep decline during the COVID-19 pandemic. The research also predicts a growth in the market size, projecting it to reach \$626Bn by 2030 which indicates that it's definitely a huge market to observe, especially considering that Boeing is currently the largest aircraft manufacturer by market cap [\[3\]](#).

The risk of an aircraft fatal incident is significantly lower than that of a car incident, yet, a fatal aircraft incident can result in huge losses for an aircraft manufacturing company. The 737 MAX incidents have cost Boeing an estimated \$20Bn in fines, an estimated \$60Bn in indirect losses due to 1200 canceled orders

and a completely shattered reputation ^[4]. An EY survey that has been conducted in 2019 following the grounding of the Boeing 737 MAXs stated that brand reputation, safety management and major accidents are some of the top risks faced by global airlines ^[5].

SOLUTION AND IMPLEMENTATION

The solution that this litepaper is trying to propose for Boeing includes the below aspects implemented using smart contracts on a public EVM blockchain like Ethereum (can be bridged to work with multiple EVM blockchains simultaneously). It's important to note that the aviation industry encompasses many parties and the whole idea is dependent on Boeing being able to promote it for those parties since Boeing as a manufacturer has the upper hand.

- **A transparent and publicly available maintenance history** associated with a certain aircraft, meaning that anyone interacting with the smart contract of SkyLink will be able to retrieve the whole maintenance history of a certain aircraft using its registration number. A maintenance record should include the date of the maintenance, the name of the company that performed the maintenance, the parts that were serviced, and the results of that specific maintenance.

This is a critical feature for several reasons:

- This feature can be integrated with travel fare aggregators such as Skyscanner to display the last maintenance date for the aircraft that will be used in the anticipated flight (along with the ability to view all the details about the maintenance record), leading to a significant increase in passenger confidence.

- This feature will drive third-party maintenance providers to be more cautious about their maintenance procedures because any sloppiness will be revealed by the public, ideally before the projected flight date.
 - This feature will allow Boeing to actively monitor the maintenance records of a given aircraft model and flag any inappropriate conduct that occurs during maintenance, allowing them to maintain their brand name if an event involving sloppy maintenance occurs.
 - This feature will expectedly increase competition in the airline market due to the fact that the maintenance records would be made available to the public and used by travel fare aggregators. It will force airline businesses to carry out maintenance considerably more frequently, increasing passenger safety and reducing the likelihood of any incidents which again will be a huge benefit to Boeing.
- **A supply chain tracking for every major aircraft component.** This covers components like engines, wings, landing gear, flight control systems, and the fuselage, among various others. This aspect in SkyLink does not involve storing sensitive information about a specific component. Its sole purpose is to monitor the ownership and location of said component, with the aim of offering transparent information regarding its current whereabouts. This facilitates improved tracking and safeguards against counterfeit components. It will involve transferring ownership of each aircraft component from one party to another using Non-fungible Tokens (NFTs).

Both aspects mentioned in this litepaper will be supplied by a ready-to-use platform for Boeing and its partners, as well as any third-party service that wants to gain insights from the stored data (such as travel fare aggregators).

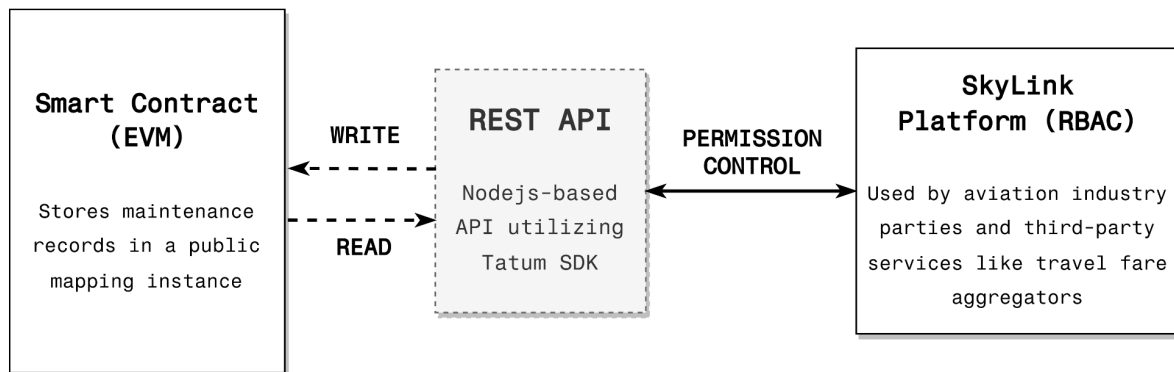


Figure 1. Demonstrates the implementation aspect of the maintenance records history.

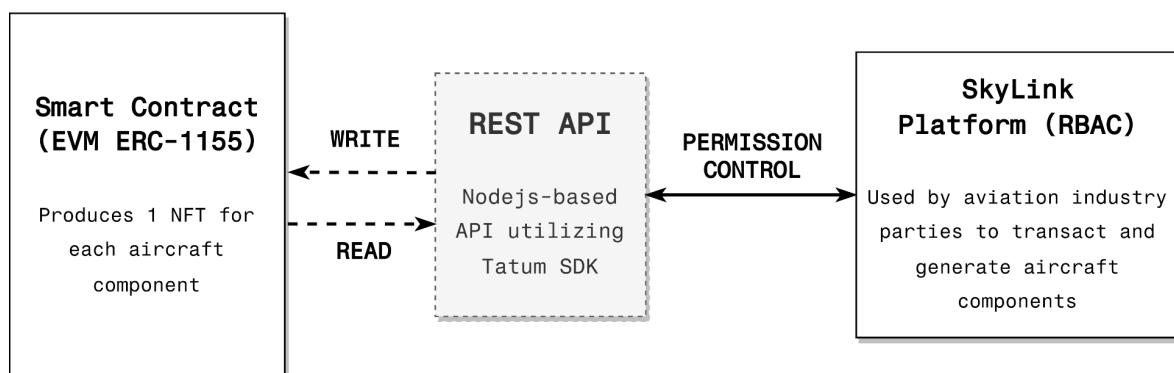


Figure 2. Demonstrates the implementation aspect of tokenized aircraft components.

REVENUE MODEL

The potential revenue generation avenues for SkyLink are diverse. Here are several considerable methods:

- **Transaction fees** - Each time a maintenance record is registered on the platform, a small fee in the native cryptocurrency of the EVM blockchain will be charged.

- **Royalties** - The collaboration between SkyLink and Boeing will result in royalties being earned for every tokenized aircraft component when it transfers ownership between different parties and the project will benefit from it as well.
- **Commercial API Access** - To gain access to the maintenance history data recorded on the blockchain and display it to its users, online third-party services such as travel fare aggregators must obtain an API key that will charge them per X number requests made to that API. In order to optimize the benefits for SkyLink and those services wishing to integrate the maintenance history data with their platforms, a pay-as-you-go model will be used here.
- **Data Insights** - Based on the accumulated data, the project can start offering detailed data insights, reports, and analytics services to airlines, manufacturers, regulators, or other stakeholders in the aviation industry.

COMPETITOR ANALYSIS

A company with the name “TrustFlight” aimed to establish what they called “*the world’s first truly global, web-based component and airworthiness records platform connecting data across the supply chain*” by leveraging blockchain technology ^[6]. The project that they proposed is called Digital Aviation Record System (DARS) and it received financial support from Boeing and RaceRocks. The project’s business model has not been discussed or revealed to the public, however, they stated that the main purpose of the project is to replace paper records for an aircraft with a digital alternative that offers greater insight and reduces manual work ^[7]. Additionally, they stated on their

official website (see *reference 6*) that the initial solution would be available by early 2022.

Based on the gathered information about DARS, it can be inferred that this project is taking a distinct approach compared to SkyLink. The information suggests that DARS is likely to be employed primarily for internal purposes, without any intention to share the maintenance record history publicly, passing over the crucial aspect and opportunity of boosting passenger confidence and safety by encouraging them to be informed about the records. Also, the data suggests that they may need to create an entirely new blockchain exclusively for implementing DARS. This prospect raises some security concerns. In such a scenario, questions arise about how this new blockchain would establish its consensus mechanisms and whether there would be vulnerabilities that could potentially be exploited. Not to mention the concerns about the sustainability of DARS's revenue model, as it would heavily rely on the financial backing of a highly specific group of companies. Furthermore, it's worth noting that there has been no publicly disclosed progress or updates regarding DARS that clarifies whether the project has been successfully implemented or not during early 2022 as claimed.

Another project called "Aeron" is aiming to increase aviation safety by supplying an immutable and transparent record-keeping platform for aircraft maintenance records and pilot logbooks. Quoting their objectives: *"Our aim is to create 'airline in a pocket' – a smart blockchain based solution. The way it works is simple. The pilot's application is used by a pilot for personal flight logging. The company application collects and verifies data from aircraft operators, maintenance organizations, flight schools and fixed base operators. In case of any mismatch in data*

between any Aeron data source with either the Air Traffic Control, pilot, or operator, aviation authorities can quickly detect and eliminate the problem.” [8].

It's important to note that Aeron mentioned in their whitepaper that they were planning to integrate a solution for storing aircraft maintenance records, but after going through their whitepaper in detail it has been concluded that Aeron is putting a significant emphasis on addressing safety issues resulting from human errors (pilots) rather than solving those that occur due to technical errors (maintenance), which is the focus of SkyLink's platform. In other words, Aeron did not provide any clear description of how and when the aircraft maintenance records aspect of their solution would be implemented. While their minimum viable product is still functional, there has been no updates to their roadmap since Q4 of 2019 which may highly indicate that the project has lost its momentum.

LEGAL CONSIDERATIONS

SkyLink does not fall under EU's Markets in Crypto-Assets regulation (MiCA):

- SkyLink **DOES NOT** perform any actions or provide any services that could deem it as Crypto-Asset Service Provider (CASP).
- SkyLink **DOES NOT** issue any E-Money Tokens (EMTs), Asset-Reference Tokens (ARTs) or other utility tokens that fall under the regulatory framework.
- SkyLink **DOES** issue Non-fungible Tokens (NFTs) whose purpose is to be tied with real physical products that represent aircraft components, and according to the regulatory framework these tokens are supposed to be exempted [9].

- SkyLink **MIGHT** issue security ERC2-0 tokens with the intention of serving as a replacement for stocks and, consequently, being eligible for inclusion in an ICO/IDO and CASPs/DEXes. Essentially, these tokens are designed to symbolize real shares. According to MiCA, security tokens are excluded from the regulatory framework, and instead, they will be subject to conventional or traditional securities regulations.

SkyLink is not subject to GDPR regulations because it primarily operates in a business-to-business (B2B) context and does not directly manage or process personal data [\[10\]](#).

MARKETING STRATEGY

SkyLink's primary focus will be to achieve **organic growth** and this can be done by leveraging multiple platforms. SkyLink will focus on two: Telegram and Medium as they will be powerful platforms to connect with the audience and share the vision for the future of aviation where transparency is key.

Telegram, with its huge user base and various helpful tools, will serve as a hub for the community. It'll keep all followers updated on the latest developments, news, and insights into the SkyLink project. It's a space where aviation enthusiasts, blockchain aficionados, potential investors, and curious minds can come together to engage in meaningful discussions.

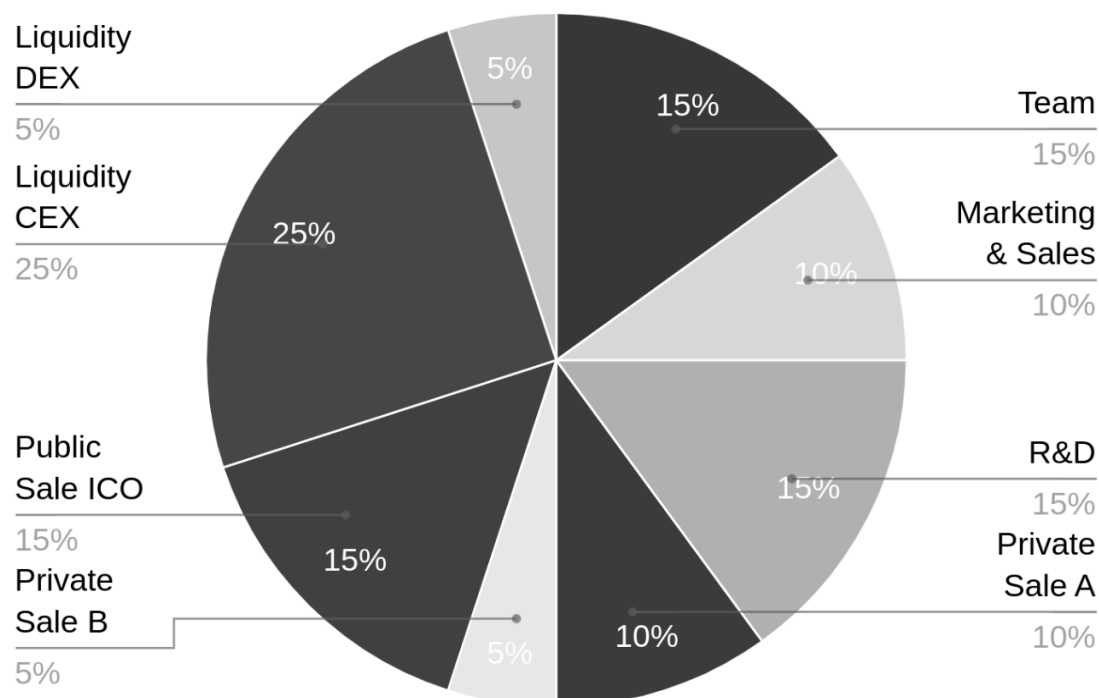
Medium, on the other hand, will be the canvas for in-depth articles, thought leadership pieces, and comprehensive project updates. Medium's nature will allow SkyLink to dive deep into the intricacies of how blockchain can revolutionize the aviation industry, providing valuable knowledge to the readers. This is

also very crucial when it comes to enhancing the awareness of SkyLink since it will heavily contribute to search engine optimizations (SEOs) and lead to a much better organic growth.

SkyLink won't stop there. There should also be a commitment to education and awareness, which is why there will be guest lectures and workshops held by SkyLink to highlight the transformative potential of blockchain technology in aviation. These events will bring together industry professionals, tech enthusiasts, and curious minds, creating a platform for the exchange of ideas and innovation.

When receiving any investments, SkyLink will allocate a portion of those investments to marketing purposes in alignment with the tokenomics. These portions will be utilized to start advertising campaigns where awareness and/or targeted traffic is thought to be the primary goal.

TOKENOMICS & FUNDRAISING

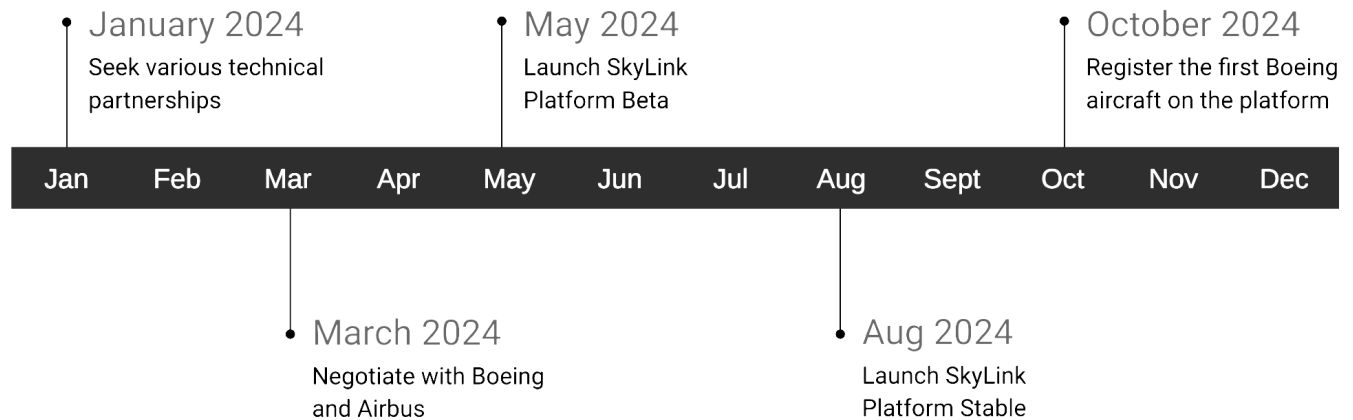


If ERC-20 tokens are issued, as previously discussed in the legal considerations section, the tokenomics distribution plan will be as depicted in the chart above. This distribution strategy is designed to maximize advantages for both the SkyLink project and its shareholders. It's worth noting that SkyLink's ERC-20 token sets itself apart from the typical utility tokens linked to specific platform functions. Instead, the SkyLink token primarily serves as a representation of ownership in the project, without a predefined utility within a particular platform.

SkyLink's funding strategy involves several stages. Initially, the focus will be on attracting angel investors to the project, with this phase concluding upon reaching the initial funding goal of \$100K. Subsequently, SkyLink will actively pursue partnerships with various organizations interested in investing, aiming to secure at least \$1M in funding. This milestone will also mark the conclusion of the first private sale (Private Sale A), propelling SkyLink's market valuation to \$10M. These investments will be consistently deployed to advance project development and raise awareness in the market.

The next objective will be to launch an Initial Coin Offering (ICO), enabling public participation in the token sale (Public Sale ICO). After the conclusion of the sale, SkyLink will initiate efforts to list its token on various centralized exchanges (CEXs) and decentralized exchanges (DEXs). Importantly, both private and public token sales of the SkyLink ERC-20 token will be subject to vesting periods. Private sale participants will face a one-year vesting period, while public sale participants will have a six-month vesting period. The rest of the tokens reserved for "Private Sale B" will be utilized when dealing with bigger entities that are interested in investing.

ROADMAP [2024]



TEAM & PARTNERSHIPS

The SkyLink founding team encompasses 4 vital skill sets:

- A cybersecurity expert with 5+ years experience in auditing smart contracts created in Solidity and Rust. This expertise is critical because it is necessary to safeguard the platform's blockchain layer effectively while it is in operation.
- A CEO and Co-founder with 20+ years experience in business management and fundraising. There is confidence in the CEO's ability to initiate highly successful fundraising campaigns and adeptly handle successful negotiations.
- A Marketing Specialist with 10+ years of experience in the Aviation industry, worked with companies like Air France and Emirates. This will empower SkyLink to execute focused marketing initiatives.
- A CTO and Founder with extensive expertise across a wide range of programming languages and frameworks. This will give SkyLink a competitive edge by virtue of its profound grasp of tech stack infrastructure management.

SkyLink is poised to establish strategic partnerships that will play a pivotal role in its success. These partnerships will encompass a broad spectrum of stakeholders within the aviation industry, including leading manufacturers such as Boeing and Airbus. Additionally, SkyLink will actively seek collaborations with third-party entities operating in the aviation sector, such as travel aggregators like SkyScanner and Momondo, as well as various airlines seeking to employ the solution in their MROs.

These partnerships are essential to the realization of SkyLink's vision. By building strong relationships with aircraft manufacturers, SkyLink aims to implement its blockchain-based solution to address critical issues related to transparency and maintenance records in the aviation industry. This collaborative approach will not only benefit the project but also contribute to rebuilding trust and confidence in the industry as a whole.

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