ATPCO TRAVEL INDUSTRY STANDARD
ATIS-01

The Standard for Standards
An industry foundation for innovating at scale

Version 1.0, 29 May 2020

Contents

About this document

Publishing information

This ATPCO standard is published by ATPCO and will come into effect on 1 May 2020. It was prepared by the ATPCO Standards and Governance team, and took into account existing industry practices including, but not limited to, practices developed by the ATPCO Community, as defined herein, including customer airlines and airline suppliers from 1980 up to the present day.

Supersession

This standard is the first publication.

Contractual and legal considerations

This publication does not purport to include all necessary provisions of a contract. Users are responsible for its correct application.

Compliance with an ATPCO Standard does not and cannot confer immunity from legal obligations.

Future releases

This document is intended to be released twice each year on 1 January and 1 July.

The initial release is intended to include a limited scope—the ATPCO Standards that cover interfaces, processing, and supporting services around distributed data for the automation of pricing and retailing, primarily used by subscribers to ATPCO data. Future releases will cover, but will not be limited to:

- API documentation
- Revenue Accounting processes
- Collection and maintenance of data
- Pricing and retailing data maintenance
- Formats for government approval of price points

1. Introduction

ATIS-01, The Standard for Standards, describes how ATPCO Standards and related documents are developed and maintained.

2. Document Scope

This ATPCO Standard describes the elements of the standards program facilitated by ATPCO as a neutral provider of data to the travel industry, related to pricing and retailing automation. The term 'pricing and retailing automation' is used consistently throughout this document to describe all ATPCO standards activity, including but not limited to price/retailing creation, price/retailing distribution, price/retailing settlement, and price/retailing maintenance—also called the "life cycle of the fare"—and also includes all components of the product price (for example, taxation).

This document encompasses the following:

1. ATPCO approach to standards

2. Development of ATPCO Standards

3. Industry harmonization of ATPCO Standards

4. Governance of ATPCO Standards

5. Content of ATPCO Standards

This standard does not include discussion of ATPCO products and services, which are sold in a commercial context and discussed in separate media.

3. Terms and Definitions

Terms are defined here as they apply in this document.

Action	ATPCO product fields whose data will be used as data storage, measurement of provisions, or for later matching/ticket issuance. These fields are processed after a match is made to the record.
Airlines for America (A4A)	Airline-owned entity specializing in the North American marketplace, responsible for standards and advocacy, further defined on their website.
Alignment	A piece of standards work that involves a change in processing by at least one of the consumers of the standard.
Airlines Reporting Corporation (ARC)	Airline-owned entity responsible for financial settlement of all US point of sale travel agency airline products, further defined on their website.
ATPCO Advisory Council (AAC)	A body of no more than 20 organizations comprising ATPCO, airlines, system providers, and other industry organizations tasked prioritize standards-setting activity, as well as resolve conflicts when a standard will deliver high benefit to airlines but is a high cost of delivery or low confidence of delivery by an adopting system provider. A primary role of the AAC is the Committee of Differences, which resolves different application of ATPCO Standards by subscribers.
ATPCO Community	All stakeholders involved in the review and approval of ATPCO Standards, including all ATPCO customers (airlines contributing data content, and subscribers receiving data content), as well as key industry organizations governing other relevant supply chain standards, for example IATA, A4A, and ARC
ATPCO product	A proprietary offering of ATPCO, not including standards, offered commercially for use in conjunction with a customer agreement.
ATPCO Reference Implementation	A set of products developed by ATPCO that can be used by the industry to benchmark and validate implementation of an ATPCO Standard. These products will adhere to all published ATPCO Standards.
ATPCO Standards	Industry technical standards established by Consensus to provide for a repeatable process with a consistent result across the travel ecosystem for pricing and retailing automation. These include the following documents:

- File layouts and field positions (record layouts and field descriptions)
- File layouts for associated tables that support data files, and their field positions and descriptions (100-series and 900-series tables record layouts and field descriptions)
- Industry reference codes used in processing (appendices)
- Validation across the data to ensure quality (cross-field edits)

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- Full descriptions of data processing (matching and application) in order to produce a consistent pricing or retailing result (data application)

- Data maintenance (load, store, data management)

Business Request	A request for an action on a standard by a member of the ATPCO Community, or by ATPCO.
Clarification	A piece of standards work which involves additions to wording that clarify the intent of the standard, but does not require ATPCO, nor any consumer of the data, to change processing.
Consensus	The consultative process, by majority or unanimity (depending on the stage in the process), through which ATPCO standards are developed, set, adopted, and maintained.
Data Application	A document that describes standard processing of airline-created data against other inputs in order to produce a consistent priced result regardless of the system processing the data.
Detailed Solution	The complete draft for the new or enhanced standard, defined in Section 5.5.
De facto	Standards that are based on facts but not formally recognized by law.
De jure	Standards that are established by law.
Enhancement	A piece of standards work that involves a change in processing by at least one of the consumers of the standard.
International Air Transport Association (IATA)	Airline-owned entity covering standards, advocacy, and industry platforms, further defined on their [website](#).
Implementation Commitment	The commitment by industry stakeholders to adopt the agreed new or enhanced standard, defined in Section 5.6.
Industry Feedback	The initial feedback for Business Requests, defined in Section 0.
Industry Governance Model	ATPCO's governance document covering decisioning structures, collaboration enablers, and standard operating procedures. It contains processes and procedures relating to the life of a business request, prioritization, escalation, and change control.
Initial Solution	The outline of a solution for the new or enhanced standard, defined in Section 5.4.
Interface Standards	Technical Standards that document file specifications and data element attributes.

Majority	In the context of consensus, a *majority* means that more companies who intend to use the standard are in favor of the documented and published standard than are not in favor.
Match	ATPCO product data that is used to determine whether a record or table is applicable.
Open Standards	In the context of this document, standards that can be used with data sourced by ATPCO, or with data sourced by any other entity.
Processing Standards	Technical Standards that document required processing by recipients of data in the format prescribed by related Interface Standards in order to achieve the intended outcome (generally a pricing or retailing result).
Proprietary Standard	In the context of this document, standards that can only be used with data sourced by ATPCO.
Subscribers	Subscribers are referred throughout the document as systems, system providers, and consumers of the data. These companies consume ATPCO data and use ATPCO Standards as technical documentation to implement processing logic for the data.
Supply chain	General term for the end-to-end travel product distribution process, generally accepted as product definition and pricing through to financial settlement, including but not limited to pricing, schedules, reservations, ticketing, departure control (airports), revenue accounting (audit, billing, settlement), and revenue management. This is also referred to as the distribution ecosystem.
Supporting services standards	Technical Standards accompanying ATPCO standards on pricing and retailing automation that describe how the standards interact with other supply chain processes (e.g., ticketing, reservations, revenue accounting).
Technical Standards	An established norm or requirement for a repeatable technical task. It is usually a formal document that establishes uniform engineering or technical criteria, methods, processes, and practices. The standardization process may be by edict or may involve the formal consensus of technical experts.
Unanimity	In the context of consensus, *unanimity* means that all companies who intend to use the standard are in favor of the documented and published standard or have had their comments appropriately addressed and resolved. All objections and comments from dissenting members who intend to use the ATPCO standard have been satisfactorily resolved.

4.   ATPCO's Standards Approach

4.1.   The Purpose of Standards

A standard exists to provide a consistent and reliable basis for all members of the ATPCO Community to share the same expectations about a product or service, providing a framework for achieving network economics, economies of scale, efficiencies, and interoperability. This has the effect of reflecting the intent of each individual airline in distributing their product pricing and retailing, reduces the possibility for costly disputes, and delivers value to the industry through increased revenues from innovative new methods for pricing and retailing.

These are the purposes of ATPCO Standards:

1. Ensure accurate and consistent processing which reduces discrepancies across stakeholders in the supply chain

2. Reduce development time for consumers of ATPCO data due to the network economics effect—effectively developing to one set of pricing and retailing automation standard for all

3. Enable innovation at scale within the airline product distribution ecosystem

4.2.   ATPCO Role in Standards

ATPCO's mission is as follows:

> To be the airline industry's trusted partner in driving innovation, reducing complexity, and delivering network economics to the entire distribution ecosystem through standards, technology, and effective governance.

To fulfil this mandate, ATPCO's mantra for standards-setting activity is

> Scalable standards driving industry innovation

There are three critical points in the above statement:

- **Scalability**, because many new ideas in the travel industry apply well to a small market but fail as they attempt to scale across the supply chain and across multiple airlines, in high volume.

- **Industry**, because ATPCO is uniquely placed as the neutral honest broker for pricing and retailing automation where all airlines and all stakeholders serving those airlines can have a voice.

- **Innovation,** because standards are often criticized for holding back innovation, whereas our standards are specifically designed to spawn and support new concepts that can create value globally.

ATPCO plays a unique role in the travel industry because ATPCO offers broad standards from the perspective of a neutral honest broker. Those standards allow interoperability across all pricing and retailing automation stakeholders in the industry, including but not limited to airlines, travel agencies, system providers, and business process outsource providers.

4.3. Description of ATPCO Standards

All ATPCO Standards are de facto technical standards and have these defining characteristics:

1. Based on facts but not formally recognized by law
2. Formal documents that establish uniform engineering or technical criteria, methods, processes, and practices
3. Best practice in the field of pricing and retailing automation as defined by experts
4. Developed by a defined consensus process
5. Subject to open and transparent consultation within the ATPCO Community
6. Subject to systematic, periodic review of their continuing validity

ATPCO Technical Standards can be characterized into these three areas:

1. Data interface and data exchange standards (Interface Standards)
2. Data processing standards for the automatic calculation of pricing and retailing results (Processing Standards)
3. Standards for processes that support these data exchanges and automated calculations (Supporting Services Standards)

ATPCO Standards are, unless otherwise specified, proprietary industry standards that may be used with ATPCO-formatted data products or other data products that conform to the ATPCO Standards for pricing and retailing automation. ATPCO also publishes open industry standards that can be used with data from other sources than ATPCO (for example, Next General Storefront, Dynamic Pricing).

For clarity, ATPCO Standards are not the following:

- The tools and processes for data collection, which are proprietary to ATPCO
- The data itself
- The method of distribution of the data (for example, API or FTP [File Transfer Protocol])
- Any other ATPCO products and services not defined above (for example, fare management tools, revenue accounting tools, or calculation tools)

4.4. Development of Standards

ATPCO manages the development, implementation, and adoption of standards through the Industry Governance Model development process (used for both product and standards development). The

expected value of ATPCO, and of pricing and retailing of airline products to the consumer, is that the exact same set of conditions will produce the same result (price and rule set) to that consumer.

Standards are developed in the expectation that those who use them have contributed to the development process as needed, and that those who use them will be appropriately experienced, qualified, and equipped to use them. In addition, these same users will apply these standards conscientiously and will continually review them to ensure they are applied consistently.

4.4.1.   Alignment and Clarification

The goal of ATPCO Standards is that no interpretation is required. Nevertheless, ambiguity or a gap in information may occasionally be found in a standard that leads to inconsistent processing of pricing and retailing data by consumers of ATPCO data. In such cases, authorized stakeholders can raise a Business Request through the ATPCO Customer Center to highlight the inconsistency and prioritize its correction according to its value to the industry.

While there will always be a balance within a business case between the value of fixing an inconsistency versus the cost of not addressing it, the goal of these standards is to ensure that all such alignment issues are addressed over time.

4.4.2.   Versioning

Standards are implemented in a functionally aligned manner, managed by ATPCO, by all stakeholders as an industry, and only one current version of any ATPCO Standard exists at a time. In other words, all systems using airline pricing and retailing data are always expected to process that data to the same set of effective published standards.

4.5.   Governance

4.5.1.   Compliance Requirements

ATPCO Standards bind the 440+ airline customers that have signed the ATPCO Databank Agreement, which means that these customers accept that their pricing and retailing automation data distributed by ATPCO should be processed according to ATPCO Standards. The standards are voluntary for the remainder of the ATPCO Community in that there is no legal obligation to apply them or comply with them, except in those few cases where their application is directly demanded by regulatory instruments (for example, by financial regulations such as PCI (Payment Card Industry) compliance, or by the US Department of Transportation).

However, it is broadly recognized that because they are the de facto standards for pricing and retailing automation, there are costs associated with not following ATPCO Standards, including but not limited to agency debit memos (ADMs), inconsistent pricing in the marketplace across systems leading to consumer confusion, and inconsistent pricing across processes within an airline, leading to costs from data analysis and correction.

4.5.2. Transparency

The development of ATPCO Standards adheres to ATPCO's general commitment, as a neutral honest broker to the airline industry, to transparency of process to the ATPCO Community. Before publication, every ATPCO Standard is available to the entire ATPCO Community for review.

Access to the proprietary industry standards—processing documentation—is given to all subscribers to ATPCO's data products. ATPCO open industry standards are available in the public domain.

ATPCO does reserve the right to retain as confidential any documentation that is considered legally sensitive in order to comply with regulatory requirements and to protect ATPCO Community members where sharing any such data would disclose commercially sensitive information.

5.   Development of ATPCO Standards

5.1.   Overview

ATPCO maintains an Industry Governance Model which is the single source of truth for the product development process and for other governance topics such as prioritization, escalation, and change management. The following sections summarize the development process in regard to ATPCO Standards.

The process for development and approval of these standards is described in further detail in this section, but the broad principles to be applied are as follows:

1.   There is enough of a business need to create a new standard, or change an existing standard

2.   There is consensus on the initial solution

3.   There is consensus on the detailed design

4.   The industry agrees to an implementation and adoption date

5.   There is 12 months' advance notice so that consumers of the data and standard can make the appropriate changes

6.   The standard is adopted by all systems on the prescribed date

7.   Airlines gain value from the standard (that is, they are using it for pricing and/or retailing automation)

Published ATPCO standards must be approved by consensus of the ATPCO Community such that all objections and comments from dissenting members have been satisfactorily resolved. Adoption of ATPCO standards is, by contrast, based on commercial decisions by relevant organizations interacting with the standard.

The steps for standards request, publication, and maintenance are shown in Figure 1.
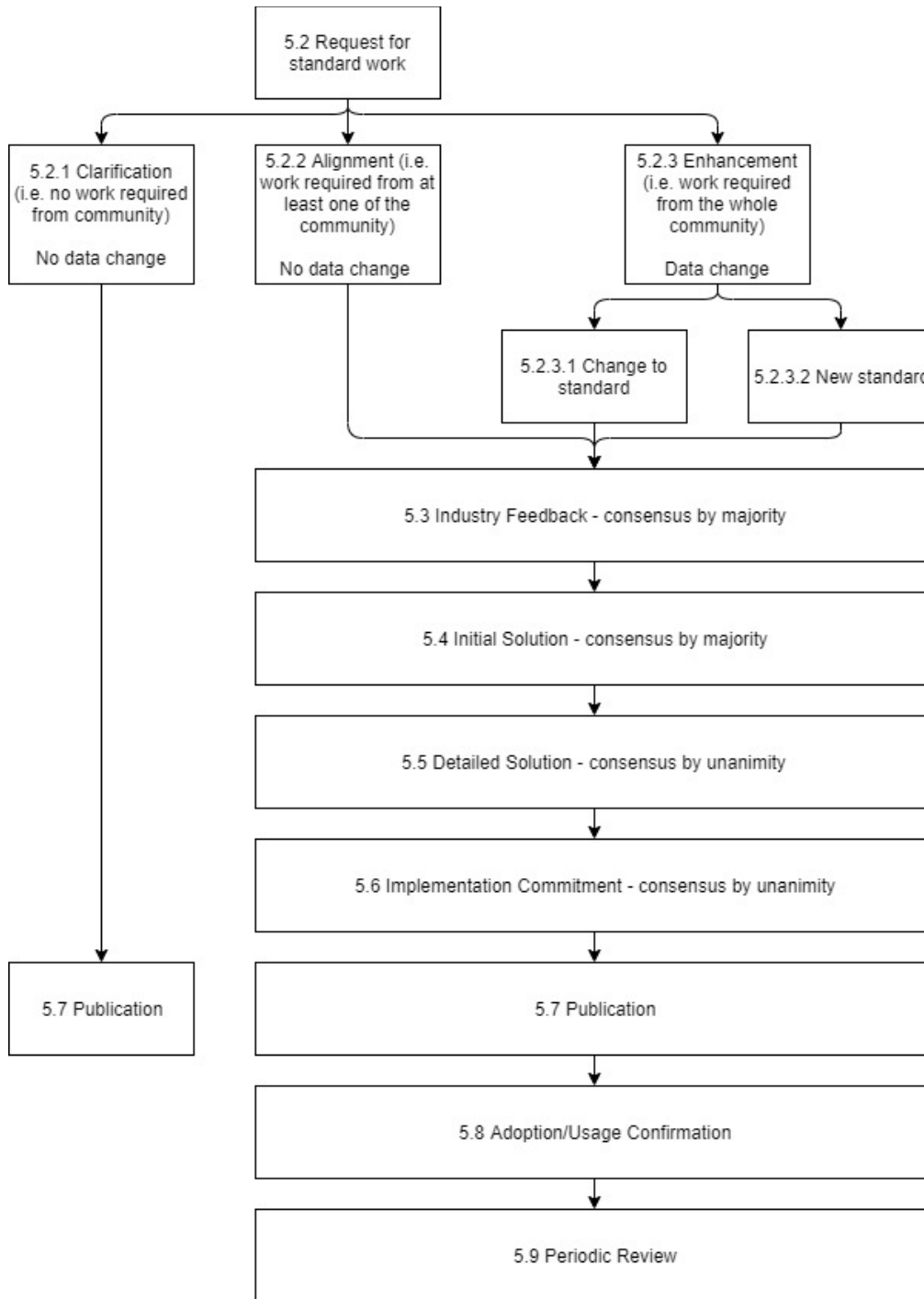
Figure 1   ATPCO Standards Development Process

5.2. Request for Standards Work

Overview	The business request acts as a common and neutral mechanism for capturing and tracking standards work requested from ATPCO. Anyone in the ATPCO Community can request standards work, including ATPCO (for strategic initiatives or technical debt).
Inputs	None
Steps	1. Request received and logged 2. Request reviewed for relevance 3. Discussed internally by ATPCO and with the requestor 4. Categorized as a clarification, an alignment, or a material change to the standards (includes new standards)
Outputs	Relevant business requests sent to Industry Feedback (see Section 0)

5.2.1. Clarifications

A *clarification* is defined as a piece of standards work which involves additions to wording that clarify the intent of the standard, but does not require ATPCO, nor any consumer of the data, to change processing. The objective of a clarification is to improve the quality of the documentation so that more serious issues of consistency do not arise for future consumers of the standard.

Clarifications do not go through the normal standards development process. They are vetted in a monthly call with major consumers of ATPCO standards (subscribers) to ensure that there is no impact. If there are no objections during the call, the item will be scheduled, packaged, and released at an announced date in the updated standard (see Section 5.7), and announced using a notification.

ATPCO's publication of Clarifications will be four times per year. The deadline for items to include in each release will be one month prior. The calendar will be as follows:

Release	Deadline for Agreed Items	Publication Date
1	28 February	30 March
2	29 May	29 June
3	28 August	28 September
4	30 October	30 November

If there are no Clarification items for one of the release dates, a notification will be sent recording an empty release.

5.2.2. Alignment

An *alignment* is defined as a piece of standards work that involves a change in processing by at least one of the consumers of the standard. Data fields and values do not change, but new wording addresses an inconsistency in the market because one or more consumers of the standard are producing a different pricing or retailing result in the marketplace.

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Alignments are treated no differently from material changes to standards (Enhancements) (see Section 5.2.3) because they compete for the same resources and so must be prioritized. They are reviewed with major consumers of ATPCO standards and undergo the normal standards development process (defined in Section 0) as a Business Request.

5.2.3. Enhancement (includes new standards)

An *enhancement* is defined as a piece of standards work that involves a change to data fields, values, or both, or is a new standard, and that requires all consumers of the standard to make a change. These items are reviewed with the submitter and undergo the normal standards development process as a Business Request (see Section 0)

5.2.3.1. CHANGE TO A STANDARD

ATPCO has a large body of standards documentation that is continually being assessed by the industry to fit new business needs. A change to an existing standard involves the re-publication of an existing document.

5.2.3.2. NEW STANDARD

When a new business need is identified, a completely new standard may be required. This will result in the publication of the first version of the document and a new standard.

5.2.4. Committee of Differences

When a request cannot initially be resolved through the normal standards development process, it is referred to the sub-committee of the AAC, the Committee of Differences. This can have two outcomes:

- Standard is clear but one or more subscribers are applying incorrectly; agree adoption date for alignment of functionality (Section 5.2.2)

- The standard requires enhancement as the business need has evolved; an enhancement is created (Section 5.2.3)

5.3.   Industry Feedback (M1)

Overview	Industry Feedback is a common mechanism both for standards-setting activity and ATPCO product development efforts, and it requires a validated (at the discretion of ATPCO) Business Request to be submitted through ATPCO's Customer Center. Industry Feedback allows a feedback loop to generate, on the basis of voting (yes, no, abstain) whether there is support for the business request.
Inputs	Validated Business Request form from any member of the ATPCO Community, including ATPCO
Steps	1. Item released to the industry for feedback (yes, no, abstain) 2. Item is logged after a period (still to be determined) as net positive, or nil/net negative on aggregate
Outputs	• Support (net positive votes by the ATPCO Community); the item moves to a product team in order of priority order with a view to creating an Initial Solution (see Section 5.4) • No support (net zero or net negative votes by the ATPCO Community); the item is closed • ATPCO may consider exceptions to this rule from time to time

Please note that clarifications do not go through the Industry Feedback process because they do not require changes by any member of the ATPCO Community.

5.4.   Initial Solution (M2)

Overview	When the Business Request has been prioritized to move on (generally a net positive voting score, unless required by mandate or ATPCO strategic direction), ATPCO produces an Initial Solution for the business problem. At this stage, ATPCO creates a synopsis of what will be changed in the standard to ensure consensus. In cases where a proposal for new fields, values, and processing is established, that information may also be circulated with the Initial Solution. The Initial Solution invites comment both from airlines (business benefit) and from consumers of the standard (cost of solution and confidence of delivery). The comment period for the Initial Solution is typically 30 days.
Inputs	Supported Industry Feedback (see Section 0) items, or ATPCO-generated items
Steps	1. Initial Solution is created by ATPCO 2. Initial Solution is distributed to the ATPCO Community for comment 3. Business benefits are scored on a scale of 1 to 10 for each item 4. ATPCO averages the score for each item to determine a priority across other Initial Solutions
Outputs	• No or low support; the item is withdrawn • Support for the item but not high priority; progress is at the sole discretion of ATPCO • Support for the item and above the line; the item becomes "Proposed" on the Product Development Plan; these items then move into Detailed Solution

5.5.   Detailed Solution (M3)

Overview	The Detailed Solution is the drafting phase for standards documentation and involves various community engagement activities such as bilateral calls, working groups, webinars, and task forces to ensure full, relevant participation by the industry, or at least every chance for any member of the ATPCO Community to comment on the solution. Adjustments can also be made to sizing for estimation purposes at this stage.
Inputs	Supported Initial Solution (see Section 5.4) items, or ATPCO-generated items
Steps	1. Detailed Solution is created by ATPCO 2. Detailed Solution is distributed to the ATPCO Community for comment 3. Comment period of typically 30 days from the ATPCO Community 4. All comments are considered and addressed
Outputs	• No or low support; the item is withdrawn • Unanimous support but with adjustments; the M3 may be reissued if material, and start this cycle again, or comments added if non-material • Unanimous support as documented; the draft standard is finalized

5.6.   Implementation Commitment (M4)

Overview	ATPCO releases the Implementation Commitment to all consumers of the standard. It includes a date for the standard's implementation that in most cases are 12 months later, unless there are exceptional circumstances (mandate or urgent industry need).
Inputs	Unanimously supported Detailed Solution (see Section 5.5) items, or ATPCO-generated items
Steps	1. Implementation Commitment is created by ATPCO 2. Implementation Commitment is distributed to the ATPCO Community for comment 3. Comment period of typically 30 days from the ATPCO Community 4. All comments are considered and addressed
Outputs	• Date is not accepted by unanimous agreement of all companies intending to use the ATPCO standard; the date is negotiated earlier or later • Date is accepted by unanimous agreement of all companies intending to use the ATPCO standard; the implementation date is finalized • Accepted items are added to the Subscriber Readiness monitoring tool and tracked monthly

5.7.   Publication of the Standard

ATPCO publishes the standard with a summary of changes on the agreed date. Because consistency is a large part of the value of ATPCO Standards, multiple versions are not permitted; only the current published standard is effective for that functional area of processing at any one time.

The standards are currently published to ATPCO's Customer Center and are available to consumers of the standard only.

5.8. Adoption/Usage Confirmation (M5)

Overview	Upon implementation (officially, 48 hours after the implementation date), all consumers of the standard are polled to confirm that they adopted the standard on the agreed date.
Inputs	Implemented standard at date agreed by Implementation Commitment (see Section 5.6)
Steps	1. Implementation and Publication (see Section 5.7) occurs 2. ATPCO monitors that all affected subscribers implemented the standard
Outputs	• At least one consumer of the standard did not adopt in time, leading to an Alignment issue • All consumers of the standard adopted at the agreed time

ATPCO continues to review airline usage of the standard each quarter to ensure value is being captured, to drive agenda items for the appropriate working groups.

5.9. Periodic Review of Standards

From time to time, ATPCO conducts reviews of standards documentation for relevance and recommendation of withdrawal as needed.

5.10. Collaboration Mechanisms for ATPCO Standards

The following committees compose the core decisioning structures for ATPCO standards-setting activity:

- ATPCO Board of Directors

- Sales Channel Executive Council

- ATPCO Advisory Council (including Committee of Differences)

- Monthly Subscriber Call

- Working Group, Task Force, ATPCO Community (standard specific)

- Industry Elevate

- Regional and Global Advisory Groups (one standard only)

In all cases, the principles of transparency and inclusion are paramount, and all stakeholders—the industry—have the opportunity to comment and participate at any time because all events, stage gates, and decision points are announced through a notification process to the entire ATPCO Community.

5.10.1. ATPCO Advisory Council (AAC)

The ATPCO Advisory Council comprises the largest airlines and systems in the ATPCO Community, as well as industry organizations—up to 20 organizations. They meet in person twice a year, and aside from general monitoring of the governance process, strategic items, and value of the entire ATPCO portfolio, they have a critical role in two areas of the standards-setting process:

- Applying conventional wisdom to the prioritized list of Initial Solution items to ensure that the plan is reasonable. Any changes are agreed by majority.

- Resolving conflict between needed delivery of a standard (typically by airlines) and commitment to delivery of a standard (by system providers) to come to a mutually agreed delivery date, including recommendations to revisit the Detailed Solution if needed to expedite the publication and adoption of the standard.

The ATPCO Advisory Council has a published charter that is available on request.

5.10.2. Monthly Subscriber Calls

Each month ATPCO holds a call with the largest consumers of our standards to monitor the readiness status of each system for upcoming items (monitoring Implementation Commitment) and for historic items (monitoring Adoption/Usage Status for the system providers).

5.10.3. Working Groups

When a standards item is ready for Initial Solution, a body is formed of industry experts comprising, but not limited to, ATPCO, any industry organization affected by the standard, airlines, and system providers. At very least, the airline requesting the change must be present (or a proxy airline supporting the change), as well as the five biggest consumers of standards (that is, subscribers who must consume the data in order to make the change effective), to form a quorum. With no quorum, the Working Group will still be held but the views of members required to form a quorum will be garnered after the fact.

These meetings are not formally documented with minutes, but summaries are provided of the collaboration used to come to a Detailed Solution and therefore a draft standard.

Methods include face-to-face meetings, virtual meetings, collaboration tools, and bilateral discussions to resolve issues specific to an airline or system provider.

Pilot programs are a way for individual or multiple companies to work together to propose standards. When setting up a pilot, ATPCO will broadly announce the timeline and purpose of the pilot so that any organization may participate or follow along on the creation of the draft ATPCO Standard. Once complete, the proposed ATPCO standard will go through the described process for full industry approval. Participation in a pilot is measured through M2 and M3 responses.

5.10.4. Industry Elevate

ATPCO consults the attending ATPCO Community—a proxy of the industry—on the final Product Development Plan before locking down delivery for the following year. Participants are requested to comment and object if applicable, and if no objections are received, or objections are in the minority or resolved, the Product Development Plan is considered final (though subject to change control practices when necessary).

5.10.5. Regional Advisory and Working Groups (NGS Standard only)

The advisory group, with the oversight of the ATPCO Industry Governance Model, meets monthly to provide guidance and resolve disputes on data and algorithms via a formal escalation process, and to work as advocates to encourage new members and adoption.

The working group, also with the oversight of the ATPCO Industry Governance Model, meets monthly to review and assess completeness of the data, define new data elements where gaps in the standard are identified, test and prove the accuracy of algorithms, and support of proofs of concept.

5.10.6. Regional Advisory Group Escalation Process (NGS Standard only)

The process for agreeing business requirements specifically for NGS is as follows:

- Publish draft algorithm and elements, allowing for 30-day comment period

- If no comments, publish as final

- If valid, defendable comments are received (objection):

  - Bilateral discussions to attempt to resolve
  - Refer to working group to redefine the data
  - Refer to the Regional Advisory Group for initial signoff

- Advisory Group recommends one of two courses of action:

  - Standard should be amended, and draft is re-published
  - No change, and published version stands

- In case of a split vote, ATPCO will cast the deciding vote with valid rationale

5.10.7. Consensus

All decisions on standards are made based on consensus (see Section 5). ATPCO's consensus process is as follows:

- For acceptance of business problems, initial solutions, and detailed solution, consensus by simple majority (that is, more support than do not support) by the ATPCO Community, except in circumstances where ATPCO introduces a request for standards work, which does not require prioritization or acceptance by majority

- For implementation commitment and adoption, consensus by unanimity (that is, there must be no dissent from all those who are affected by the change)

Consensus is based on the desire to achieve general acceptance for the application of a standard within its intended sphere of influence. The means making sure that the interests of all stakeholders who are likely to be affected by it are considered, and that individual concerns are carefully balanced against the wider public interest.

When a member of the ATPCO Community expresses a concern and it is supported by sound factual arguments, it will be taken seriously. If such objections are not voiced through the test of broadly distributed notifications inviting comment, it will be assumed that consensus has been achieved.

In practice, the largest airlines and largest systems tend to lead on behalf of the rest of the industry. However multiple opportunities are given to the entire ATPCO Community to comment, propose change, or object to proposed standards.

6. Industry Harmonization of ATPCO Standards

6.1. The Standards Ecosystem

ATPCO produces standards that govern pricing and retailing automation for the travel industry. For these standards to be effective, they must be harmonized with the rest of the supply chain that is governed by other industry organizations. The organizations that ATPCO works with on an informal basis to harmonize standards are the following:

- International Air Transport Association (IATA) – supply chain business standards from airports, to reservations, to ticketing, to sales data reporting, to revenue accounting, including new concepts such as New Distribution Capability messaging and retailing taxonomy

- Airlines Reporting Corporation (ARC) – standards for agency sales data reporting for United States based travel agencies

- Airlines for America (A4A) – standards covering the United States domestic marketplace, typically aligned with IATA with exceptions as needed

- SITA – no standards activity, but heavily involved in the supply chain through infrastructure and system provision to member airlines

Collaborative activities include

- Monthly call with each organization to ensure due diligence on communication of issues that may affect standards-setting activity of any of the organizations

- Participation in standards-setting activity across organizations

- Multilateral meetings to improve industry organization ecosystem for working together

6.2. IATA and ATPCO Standards Activity – Common Agreement

The term "standard" is used in many different contexts. IATA and ATPCO both use the term *standards* to describe something that is developed and adopted by the industry to facilitate common behaviors, and repeatable processes. In developing standards, both IATA and ATPCO seek to build consensus wherever possible. Adoption follows the formal process determined by each organization's established governance.

IATA and ATPCO are both industry organizations, and both aim to drive efficiencies for airlines. Both develop many standards supporting the airline distribution ecosystem.

IATA facilitates the development and adoption of procedural standards (describing common behaviors) and data exchange standards. IATA standards cover all aspects of commercial, operational, and financial airline processes for both passenger and cargo. These standards are developed under the strict governance structure of the IATA Traffic Conferences and are adopted by member airlines under the Provisions for Conduct of Traffic Conferences and IATA Resolution 009. IATA standards form an agreement between IATA member airlines. This agreement defines the processes they will follow when interacting with each other, or when interacting with third parties. IATA Resolutions require unanimous support to be adopted and are binding on all member airlines.

IATA standards are never developed around one supplier's solution or one source of data. They are open and support a competitive market for solution providers. IATA also produces reference data for the industry where IATA is identified by its members as the source of this data by an IATA Resolution.

In addition to standards, IATA also facilitates the development and adoption of specifications for interactions with IATA's own industry settlement platforms. These are developed within the standards governance framework (with airlines developing and adopting changes) but relate to interactions with IATA. An example of this includes the BSP Data Interchange Specifications Handbook (DISH) which facilitates data exchange with the IATA BSP. These specifications may be used by any parties but are designed around use in IATA platforms.

ATPCO standards development and standards-setting activity focuses on pricing and retailing automation. These standards bind all ATPCO customer airlines, are defined within ATPCO's governance model. ATPCO standards are agreed by consensus from the complete set of ATPCO customer participating airlines and system providers. Adoption of ATPCO standards by subscribers to ATPCO data is non-binding but is a generally accepted industry practice. The ATPCO technical standards form an agreement amongst ATPCO participating customers on the exchange of data with ATPCO, processing of this data, and interaction with supporting processes.

ATPCO produces technical standards that describe data exchanges (interface standards), the processes used to automatically calculate airline pricing and retailing results (processing standards), as well as standards for processes that support these data exchanges and automated calculation such as government and regulatory automation standards (supporting services standards). These standards are for use with ATPCO-sourced pricing and retailing data content. ATPCO also publishes open standards that are agnostic and can be used with ATPCO pricing and retailing data, or pricing and retailing data that is available in ATPCO formats but has been obtained from another source. ATPCO does not develop standards concerning interactions between airlines and third parties, unless these interactions involve the use or processing of data that can be sourced from ATPCO. This could include supporting processes in the supply chain such as guidelines on ticketing of certain transactions following the application of ATPCO data (for example Negotiated Fares – Ticketing Standard) or guidelines for revenue accounting (for example Baggage – Ticketing and Reporting Standard).

ATPCO standards include the details for processing ATPCO data for airlines and third parties, and this is a clear difference between ATPCO standards and IATA standards. IATA standards typically do not specify how data is processed internally by implementors, and instead focus on interactions and interoperability between parties.

ATPCO technical standards also take into consideration IATA standards, to enable airlines to comply with IATA standards. Where an ATPCO standard supports pricing and retailing automation and needs to reference IATA standards, ATPCO drafts documentation to reference the relevant IATA standard, which is then included as an Appendix to the ATPCO standard.

IATA and ATPCO have a strong relationship, and a long history of working together to add value to the airline industry. ATPCO has more than 400 customer airlines including many IATA member airlines. There is a clear benefit in having harmonized, standards development and adoption activities across both organizations.

IATA and ATPCO will collaborate in 2020 to document governance for collaborative standards development activity. This is especially important given industry transformation impacting retailing and distribution, such as dynamic pricing, and new ATPCO products such as Next Generation Storefront

(NGS)™ because these initiatives involve potential overlap of standards. Clearly articulated roles and responsibilities, and close collaboration between IATA and ATPCO, would ensure that no duplication occurs. This agreed governance will be included in the ATPCO Standard for Standards (ATIS01) for discussion, consensus, and acceptance by the industry.

6.3.   Roles and Responsibilities

6.3.1.   ATPCO

ATPCO's principle responsibilities within the scope of this standard are as follows:

- Create the ATPCO Standards (i.e., authoring, proposing to the industry).

- Building and facilitating consensus in the industry.

- Publishing ATPCO Standards.

- Reviewing and highlighting discrepancies with other Industry Standards (e.g., IATA, A4A).

- Conduct due diligence to monitor that the principles, processes, and practices described in this standard are maintained.

- Positively communicate and promote ATPCO's role as a neutral standard setting body for the travel industry.

- Facilitate decisioning structures such that the right standards are developed in the right amount of time—in other words, efficient and effective standard setting.

- Provide inputs to ATPCO's Industry Governance Model to support the ordered development of standards for the travel industry.

6.3.2.   Airlines

Whether board members, members of the ATPCO Advisory Council, or customers of ATPCO products, airline representatives have a responsibility to the following:

- Raise Business Requests where a genuine business problem exists.

- Advocate and articulate the business problem to allow for an educated debate on priority.

- Actively engage in the prioritization process by providing level of benefit for proposed standards changes (note that airlines have the right to change their response at a later date).

- Actively engage in solutioning and design to ensure well-rounded and consultative standards are developed to address the business need.

- Use the standard when it has been implemented and adopted across the industry.

- Provide appropriate expertise and representation throughout the standards development process.

- Inform ATPCO promptly when any member of the ATPCO Community is not adhering to the standard.

6.3.3.   System Providers

This information specifically applies to system providers who consume ATPCO standards and are affected by them, requiring some level of adoption. This group includes airlines who have proprietary systems that consume the data, and companies who provide systems to airlines in cases where the airline subscribes to the data. Responsibilities are as follows:

- Engage their individual airline customers to ensure adequate input into the standards-setting process.

- Give a considered view of cost to deliver changes necessary to comply with the standard, as well as confidence of delivery.

- Supply appropriate alternatives to address any issues with delivery of high value standards to the marketplace caused by that system. For example, supply alternative design approaches that could speed up the capture of value by adopting the standard faster.

- Actively engage in solutioning and design to ensure well-rounded and consultative standards are developed to address the business need.

- Make best endeavors to meet commitments to adoption of the standard as published in ATPCO's Product Development Plan.

- Engage their individual airline customers after adoption to use the standard to capture value in the marketplace.

- Provide appropriate expertise and representation throughout the standards development process

- Inform ATPCO promptly when any member of the ATPCO Community is not adhering to the standard.

6.3.4.   Industry Organizations

For this document, these organizations include, but are not limited to, A4A, ARC, IATA, and SITA. Responsibilities are as follows:

- Proactively review proposed standards and flag any perceived supply chain issues.

- Provide appropriate expertise and representation throughout the standards development process.

- Proactively meet to ensure that standards-setting activity is harmonized and aligned across the supply chain to prevent issues occurring during the standards-setting process.

7. Content of ATPCO Standards

The initial version of this ATPCO Standard is focused on distribution of pricing and retailing automation data. Changes to documentation standards and the addition of other business areas (for example Revenue Accounting, government approvals, data collection) will be covered in future releases.

7.1. Common Principles

All ATPCO standards are written to a common format and style. As a general principle, the standards must contain detail that covers all possible coding use cases given the referenced data, leaving no room for ambiguity of processing. Therefore, the goal is consistency of processing of the data in the marketplace.

Each standard must include a copyright page which includes the following text:

Publication Date: [Day, Month, Year of release]

The information contained in this document is the property of ATPCO. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means; mechanical, photocopying, recording, or otherwise, without the prior written permission of ATPCO. Under the law, copying includes translating into another language or format. Legal action will be taken against any infringement

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7.2. Documentation Content

7.2.1. Section A – File Layout (specification)

The file layout is a descriptive list of data elements included in the file to which the standard refers. The file layout must include the following elements:

- Field Name: a short name for the data element to be referenced in other standards documentation.

- Description: a single sentence descriptor of the data element.

- Location: the location of the data element in a fixed record file.

- Specifications: the allowable values in the field/element with description of the meaning of the value as applicable, including whether a blank is allowed as an applicable value, and what blank specifically means.

File Layouts are generally available to the entire ATPCO Community through the Customer Center.

7.2.2. Section B – File Layout – Tables (specification)

The file layout for tables—100- and 900-series tables (that is, not Answer Tables)—exactly as for Section A (7.2.1), is a descriptive list of data elements included in the table to which the standard and file refers. The file layout for related tables must include the following elements:

- Field Name: a short name for the data element to be referenced in other standards documentation.

- Description: a single sentence descriptor of the data element.

- Location: the location of the data element in a fixed record file.

- Specifications: the allowable values in the field/element with description of the meaning of the value as applicable, including whether a blank is allowed as an applicable value, and what blank specifically means.

File Layouts – Tables is available on request to any member of the ATPCO Community.

7.2.3.   Section C – Industry Reference Data (classification)

Industry reference data—referred to as Appendices—is a standard set of defined codes that are used throughout the data as meaningful and consistent values in conjunction with airline-coded data. These are set by ATPCO in collaboration with the industry, which may include but is not limited to airlines, system providers, and other industry organizations, and are maintained by ATPCO. A list of industry reference data is included in Appendix A.

All these appendices are distributed in a static form and published on ATPCO's Customer Center to support compliance to the standards and are wholly maintained by ATPCO.

Industry Reference Data is available on request to any member of the ATPCO Community.

7.2.4.   Section D – Validation Edits (method of test for data quality)

These edits—cross-field edits within a record, not cross-record edits—are documented in standards to ensure that the quality of information to the industry is high, providing consistency and accuracy across providers. Validation Edits is a descriptive list of data elements included in the file to which the standard refers, and must include the following elements:

- Field Name: a short name for the data element to be referenced in other standards documentation

- ATPCO Record Location: the start and end positions of the field/element in a fixed record file (see "Location" in Section 7.2.1).

- Required: a binary value describing whether the element is required (must be populated) or is optional (may be populated).

- Cross Edit: a description of validations based on other fields/elements in the file which are used for an audit of accuracy of the data record.

Validation Edits are available only to subscribers to ATPCO's data products.

7.2.5.   Section E – Data Application (specification)

The Data Application document describes the standard processing of airline-created data against other inputs in order to produce a consistent priced result regardless of the system processing the data. The Data Application must include the following sections:

1. Overview: contains data requirements for processing, and a basic processing overview.

2. Definitions and assumptions: definition of terms used within the document (which are not common to ATPCO's published glossary), and assumptions inherent to using the standard accurately.

3. Detailed field processing: a descriptive list of data elements included in the file to which the standard refers—note that Data Application common definitions are found in the Data Application Glossary, as opposed to the ATPCO Glossary—and must include the following elements:

    a. Byte Location: see 'Location' in Section 7.2.1.

    b. Match/Action/Key Match: a binary value describing whether the data element must be matched to another incoming data source. The incoming data source could be an element on another ATPCO record, or is an action describing processing when data in the rest of the record has been positively matched, or specifies the basic information needed to uniquely identify a record for data maintenance purposes. A Match is defined as "the data that is used to determine if the record or table is applicable." An Action is defined as "the data will be used as data storage, measurement of provisions, or for later matching/ticket issuance. These fields are processed after a match is made to the record."

    c. Definition/processing: a text description of the processing that the data element triggers, along with a description of the meaning of that processing.

4. Processing: a text description of every field and value in the data file, including match conditions, descriptions, application in conjunction with other fields and values (as applicable), examples, and flows as needed to ensure that every permutation of processing is documented to avoid any ambiguity or inconsistency.

5. Travel Segment Indicators (TSIs): Codes that define a specific point or portion(s) of travel; these codes may be used alone or in combination with Geographic Locales to specify the application of a provision. This section of the document is used to define the most commonly used TSIs for the record being defined by the data application document (to be used in conjunction with the TSI Data Application standard).

6. Coding conventions: commonly applied conventions applied to sequencing or general coding of the data. These are simply recommended coding practices for data integrity in specific circumstances and are not enforced by edits.

Data Application is available only to subscribers to ATPCO's data products.

7.2.6. Examples (guide)

Some standards have separate examples documents that detail, field by field, examples of itineraries that best highlight the intended processing of the data in a standard manner.

Examples documents are available only to subscribers to ATPCO's data products.

7.2.7. Standard Overview (guide)

For particularly complex standard sets, overviews show how multiple standards work together to create a single result. These are designed to show how data works together, describe how it can fit together in a relational way, and provides context to more general processing such as date logic.

Overview documents are available only to subscribers to ATPCO's data products.

7.2.8. Next Generation Standards (coming soon)

ATPCO envisions four digital artifacts that will drastically simplify the documentation described above, primarily by digitizing the Interface Standards into "data about data":

1. Standards library (all Section E – Data Application documents)

2. Data Dictionary (all Section A – File Layout, Section B – File Layout (Tables), Section D – Validation Edits, and Section E Chapter 3 – Detailed Field Processing)

3. Industry Reference Data (Section C – Industry Reference Data)

4. Glossary/Definitions (Section E Chapter 2 – Definitions)

7.3. Intellectual Property Rights

All intellectual property and copyright of the standards are the sole property of ATPCO. Members of the ATPCO Community are entitled to use relevant content published and owned by ATPCO as part of the standards-setting process and in accordance with ATPCO policies; reproduction or use in any other context (other than as a subscribing data customer) is strictly forbidden.

7.4. Applicable Law

ATPCO performs reasonable due diligence to ensure that ATPCO proprietary industry standards are vetted to comply with local and global regulations. However, standards are always subordinate to the law. It is important that they are drafted to avoid any confusion between the provisions of a standard and requirements imposed by law.

Reference to applicable legislation where it is relevant and helpful in application of the standard is permissible but is not encouraged.

ATPCO standards make no attempt to offer any interpretation of the law.

ATPCO standards are supportive of ATPCO's widely broadcast pro-competitive mission, as is the standards-setting process outlined in ATIS--01.