

ACORD

**NEXT-GENERATION
DIGITAL STANDARDS**



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EXECUTIVE SUMMARY

Digital Transformation

Advances in digital transformation have once again changed the essential nature of data exchange—in formats, quantity, structure, and value. This rapid growth of information technology has expanded the types of information that can be captured in the digital world. It is also creating value across many industries, and the insurance industry is a prime example. Data consistency, quality, standardization, and structure have become more crucial today than ever before, and data-driven organizations have the potential to thrive in this environment.

Industry Trends

Application Programming Interfaces (APIs) are the primary mechanisms enabling most currently available mobile and web applications to integrate data from multiple enterprise systems. Most enterprise applications are operationally focused, and they require authentication and security to protect corporate intellectual property. APIs strengthen flexibility by allowing developers to use and add to enterprise system capabilities securely. Properly designed APIs are concerned only with data, not platforms or devices. They simply expose or locate the data, package it together, enhance its usability with added functionality, and allow others outside the organization to build onto that functionality.

ACORD's Data Standards are expanding beyond XML messaging, and now support the most common data manipulation languages in use today: JSON and YAML, based on the most widely used API microservices architectural style, REST. JSON (JavaScript Object Notation) is a lightweight data-interchange format that is easy for humans to read and write, and for machines to parse and generate. YAML (short for Yet Another Markup Language) is a data-oriented language structure used as the input format for many software applications. Microservices Architecture, an architectural style, is predicated on the principle of breaking down an application into smaller components enabling them to have greater flexibility, scalability, and availability. REST (Representational State Transfer) is generally preferred because it requires less bandwidth, providing better performance for internet communications. Using these newer technologies, ACORD is focused on creating microservices building blocks. When combined, these building blocks address many kinds of insurance business transactions, independent of geography or business domain.

ACORD Next-Generation Digital Standards

Through its Standards Project Group, ACORD brought together member firms, ranging from carriers to brokers to reinsurers to InsurTech innovators, to develop API Specifications and microservices components to drive digital transformation. Incorporating technology innovations from InsurTech while leveraging the extensive ACORD domain and geography-specific Data Standards to create business use cases and a universal glossary of business entities and elements, ACORD's Next-Generation Digital Standards emerged.

The ACORD Next-Generation Digital Standards contain an inventory of entities and data elements used to generate a suite of JSON and YAML data-interchange formats based on a microservices architecture and RESTful API Specifications. Also included in the Next-Generation Digital Standards are artifacts such as the API Design Specification Guide, Naming and Design Rules, and a User Guide to assist in the creation and implementation of a member's APIs using the Standards Assets.

The benefits for member firms who are interested in extending digital microservices to their partners have been obvious from the start. Our very first participating early adopter—a major insurance carrier—worked with ACORD for several months to produce API Specifications and JSON/YAML Resource Definitions. They spent another month implementing their APIs on a gateway server with a web UI (for trading partners not yet ready to integrate using APIs). Then, they authorized an insurance agent mobile platform solution provider to access their gateway, and that solution provider had the first API tested and deployed in 6 hours.



ACORD NEXT-GENERATION DIGITAL STANDARDS

Introduction

As our member companies keep up with ever-changing technologies and grapple with a multitude of challenges—ranging from InsurTech-driven disruptions to business models and processes, to consumers' rising expectations of a highly personalized digital experience—ACORD is committed to delivering Next-Generation Digital Standards to enable the efficient and effective flow of data among all stakeholders across the insurance value chain.

ACORD Next-Generation Digital Standards are a core suite of standardized resource definition files with JSON and YAML data-interchange formats and components which enable microservices architectural-style RESTful application programming interfaces (APIs). They are strongly grounded in real-world business problems: use cases submitted by ACORD members were broken down into smaller user stories, resulting in a set of Standards enabling a robust collection of insurance transactions, ranging from policy to claims to reinsurance—all exchanging “bite-size” information. These small fine-grained microservices business transactions can be exchanged between insurance partners such as an agent and broker, broker and carrier, cedent and reinsurer, or solution providers and insurance participants. They can also be exchanged between multiple systems within one enterprise. In some instances, these user stories were based on net-new transactions, not available in today’s ACORD XML Messaging Standards.

Designed with the concept of reusability, the Next-Generation Digital Standards JSON resource models and components are reused across different business domains (property and casualty, life and annuity, reinsurance), and across geographies. The Next-Generation Digital Standards, where appropriate, also support digitalized versions of current ACORD Standards.

Benefits of the Next-Generation Digital Standards are extensive. Our member stakeholders can leverage the Next-Generation Digital Standards to help build foundational capabilities to improve data quality, increase efficiency, and promote innovation. These Standards will enhance capabilities to develop, integrate, and interoperate both within the enterprise and between trading partners—including both new and existing products, services, and processes. ACORD Next-Generation Digital Standards will drive efficiencies across all steps of the insurance value chain.

As a member-driven organization, ACORD relies on our community of subject matter experts and leading industry practitioners to guide and contribute to the agile approach of development and testing of the Next-Generation Digital Standards. While much of the credit goes to the architects, business analysts, and other technologists for their strong domain knowledge and support in the delivery of the ACORD Next-Generation Digital Standards, we always keep in mind that the technologists are solving the problems of the business users. Hence, the needs of the business users are still, first and foremost, the primary consideration.

Mission & Vision

The vision and mission of the ACORD Next-Generation Digital Standards are to establish reliable, consistent specifications and guidelines for application programming interfaces (APIs) and microservices, supporting innovative solution implementations which help simplify communications between insurers, brokers, agents, other distribution channels, and consumers. Based on the latest industrial, technical, business, and consumer experience, the Next-Generation Digital Standards will be regularly reviewed to ensure they align with quickly changing technologies. They will help insurance industry stakeholders over the years to build foundational capabilities to support evolving business and technology needs in business operations, communications, and customer experience.

Digital Standards Framework

ACORD Next-Generation Digital Standards are a set of standardized API definitions constructed on a frame serving as the foundation upon which global members can build and develop their own microservices APIs. Guided by a set of community-driven principles, the Next-Generation Digital Standards framework involves the creation of a single design model that can be implemented in different languages (e.g. JSON, YAML) and presented in multiple technical formats within a digital paradigm to support innovative, next-generation solution implementations applicable across all business domains and geographies.

The framework takes two approaches to facilitate the continuous development and delivery of the new Standards. The first approach is based on a top-down cross-domain analysis, while the second, based on user stories submitted by members, uses a bottom-up build approach.

ACORD recognizes that there are hundreds of user stories yet to be told, and that it was not feasible to capture all business transactions across all domains in a single release of the Next-Generation Digital Standards. Through its top-down analysis, ACORD published a set of guidelines to assist our members in their own creation and implementation of APIs using the new Standards assets. These “How to” specifications and guidelines documentation include:

- ACORD Next-Generation Digital Standards API Design Specification Guide
- ACORD Next-Generation Digital Standards API Glossary
- ACORD Next-Generation Digital Standards API Security Guide
- ACORD Next-Generation Digital Standards Code List Specification Guide
- ACORD Next-Generation Digital Standards Frequently Asked Questions (FAQ)
- ACORD Next-Generation Digital Standards Guiding Principles
- ACORD Next-Generation Digital Standards Implementation Guide
- ACORD Next-Generation Digital Standards Introduction & Training Manual
- ACORD Next-Generation Digital Standards Naming & Design Rules Specification Guide
- ACORD Next-Generation Digital Standards User Guide

For a description of the listed items above, see Appendix.

As we accomplish our work under the motto “by the industry, for the industry,” the hope is that as implementations gain traction and the number of user stories increases, members will continue to submit their user stories and API definitions to ACORD for inclusion in the Standards.

Alternatively, business use cases directly submitted by members to ACORD took a “bottom-up” build approach, where each use case was analyzed and deconstructed into small fine-grained microservice user stories. Each user story, represented by a specific business process or action, is accompanied by a resource model with its particular data requirements and attributes defined in their API Data Specification. Along with each User Story Microservices API Data Specification, the accompanying technical output from the “bottom-up” build produced:

- User Story Specification Document
- Microservices JSON & YAML Resource Definitions Files
- Microservices JSON & YAML Sample Implementation Files
- Microservices JSON Sample Payload
- XML Schema & Sample Files (upon request only)

For a description of the listed items above, see Appendix.

Also included in the Next-Generation Digital Standards are the rules and definitions of reusable JSON structures for standard APIs across all the business domains. This collection of resource components, available for reuse for the different user stories, is also part of the Standards assets and captured in a centralized Master Resource Definition file.

Next-Generation Digital Standards are autonomous of other ACORD Standards. However, some business requirements will drive changes which impact both the new Next-Generation Digital Standards and existing ACORD Messaging Standards. In those instances, data elements reused between the different Standards will be traceable, as there will be a matrix linking the Next-Generation Digital Standards to the existing ACORD Messaging Standards. Also, the ACORD Reference Architecture will be enhanced as necessary to provide data consistency and robustly represent required insurance concepts as detailed in the new Standards.

Standards Project Group & Sub-Groups

ACORD created the Next-Generation Digital Standards Project Group and Sub-Groups to bring together motivated member firms and InsurTech innovators to develop API Specifications and microservices components which will assist member firms in achieving digital transformation. Through various sub-groups, members from across multiple business domains met regularly to construct the tenets of the Next-Gen Digital Standards. Representatives from Property & Casualty (P&C), Life and Annuity (L&A), Global Reinsurance, and the Asia-Pacific AML community formed individual small groups to focus on carrier/partner real-world driven use cases.

For example, one L&A member submitted several foundational user stories which were common and reusable across all domains and geographies, such as the validation of addresses, bank accounts, and searches for policies based on insured information. Another example came from a P&C member company, which identified their ten most frequent commercial insurance business transactions that remain unautomated due to deficiencies in existing web services messaging technology; all of these were policy changes. These small “chat-type” transactions, which were all non-premium-bearing, were unsupported by digital messages. A third group of use cases involved another P&C carrier with user stories around enabling commercial lines quoting and placement. For a summary view of the user stories described, see chart below.

Sample User Stories		
L&A Carrier	“Foundational” user stories reusable across all domains & geographies	<ul style="list-style-type: none"> • As a user, I need to be able to validate the accuracy of an address. • As a user, I need to validate a bank account and the customer it belongs to. • As an insurer, I need to search for policies based on Insured Information.
P&C Carrier	Most frequent transactions (policy changes), presently unsupported by digital messaging	<ul style="list-style-type: none"> • As an agent/insured, I require the ability to change the primary named insured on a policy or account. • As an agent/insured, I require the ability to change the bill plan on a policy or account. • As an agent/insured, I require the ability to update WC Class Codes and Payroll information for a policy.
P&C Carrier	Most pressing need for a digital standard to enable commercial lines quoting & placement	<ul style="list-style-type: none"> • As an agent, I need to send to an insurer a submission to get an indication of the insurer’s willingness to quote. • As an agent, I need to send to an insurer a submission to get an indicative quote for a default selection of product options. • As an agent, I need to send to an insurer a submission to get, select and submit product options for a customized quote.



EARLY ADOPTERS

The first insurance carrier to participate in a Next-Generation Digital Standards Sub-Group with ACORD had already invested a couple of years developing and deploying APIs and microservices to integrate all their internal systems. They had experienced remarkable reductions in the time required for development, testing, and deployment due to the modularity and reusability of their microservices APIs. The efficiency of this new technology also dramatically improved the performance of their applications.

When they decided to implement this new technology with external business partners, they logically chose to partner with ACORD, since all their existing web-services SOAP integrations were based on ACORD Data Standards. They first identified the top ten business transactions for which they had no digital integration, and asked that ACORD create a Next-Generation Digital Standards Sub-Group to address these.

Their business and technical subject matter experts worked for approximately two months with ACORD to deconstruct those ten business transactions into granular user stories as the basis for microservices APIs. ACORD business analysts leveraged the existing ACORD Data Standards to produce data requirements definitions describing the business messages, entities, and elements that composed those user stories, and ACORD technical resources developed the matching API Specifications and JSON/YAML Resource Definitions.

The insurance carrier deployed an API gateway server and spent an additional month implementing their APIs on that server using the agreed-upon API Specifications and Resource Definitions, providing a web user interface for those not yet ready to integrate using APIs. Then, they authorized an insurance agent mobile platform solution provider to access their gateway, and that solution provider had the first API tested and deployed in six hours.

This impressive speed-to-market is facilitated by both the nature of the Standards themselves, and the approach ACORD is utilizing in their development. The Next-Gen Digital Standards are relatively accessible to developers, with low barriers in the expertise and training required to work with them effectively. They also take advantage of a constantly growing knowledge base, accrued from real-world implementation experience in our highly collaborative, industry-wide standards development groups. These factors allow new adopters to optimize the time, cost, and effort involved in implementation. They also simplify integration with both internal and third-party systems and applications.



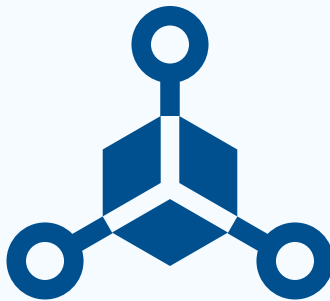
STANDARDS RELEASES

ACORD announced the first release of the Next-Generation Digital Standards in December 2019. The participation and collaboration of ACORD Members across lines of business and geographies has been essential to the success of our Next-Gen Digital Standards development effort. The ACORD Next-Gen Digital Standards will continue to have semi-annual releases as we continue to grow and evolve the standard. We encourage members to adopt, implement, and join us in our efforts as we continue to develop a comprehensive set of Next-Generation Digital Standards that will benefit you and accelerate the insurance industry's ongoing digital transformation.



CONCLUSION

Insurance transactions rely on the timely and accurate exchange of data. With the Next-Generation Digital Standards, the insurance industry can rely on ACORD to build robust digital standards which improve data quality, increase efficiency, and promote innovation. With the insurance industry in the midst of digital transformation, members will recognize the positive effects of the Next-Generation Digital Standards, as they enable easier introduction of innovative products by enabling interoperability between trading partners, reducing the need to create custom-built implementations. Next-Generation Digital Standards also provides capabilities for new and existing products, services, and processes, ensuring easy integration and interoperability across the industry. With its latest Standards, ACORD ensures the electronic data exchanges and communications between carriers, brokers, third-party distribution partners, agents, and consumers are in place and ready for new business opportunities in this digital, data-driven era.



APPENDIX

Background

Electronic Data Interchange (i.e., AL3 for P&C and DTCC for L&A)

L&A Program DTCC EDI Public Specification files provide a traditional EDI (flat file) format for communicating common life insurance information including application, asset pricing, commissions, financial activity, inforce activity, licensing, appointment, positions, and valuations.

XML Business Transaction-Centric Messages

The purpose of the XML Standard is to describe the construction and usage of transactions, the insurance information-carrying components for the electronic communications of data between insurers and independent agents within the Property & Casualty insurance industry. The structure is oriented explicitly towards batch (as opposed to interactive) transmission. This EDI standard provides guidelines relative to the implementation of insurer/agent data communications capability.

SOAP Web Services & XML Messages from ACORD Messaging Library (AML)

ACORD XML Standards define a specialized message exchange service based on the Web Service Description Language (WSDL) using Simple Object Access Protocol (SOAP) standards. Following this protocol, a message consists of an envelope with the XML root element, a header, and a body that both are direct child elements of the envelope. The SOAP envelope only contains structural information, not the message itself. The actual SOAP messages are sent as attachments with the message and are referenced within the message body.

The AML Standard enables London Market Delegated Authority Reporting by MGAs & Lloyd's coverholders around the world, supporting submissions for Agriculture, Accident & Health, Marine Hull, Cargo, Cyber Breach, Term Life, Legal Expenses, Bankers Blanket Bond, Directors & Officers, Extended Warranty, Medical Malpractice, Product Recall, Professional Indemnity, and Motor lines of business as well as Commercial Policy Synchronization.

Definitions

ACORD Next-Generation Digital Standards API Design Specification Guide

This document describes the common technical standards defined by ACORD to be used when creating APIs (Application Programming Interfaces).

ACORD Next-Generation Digital Standards API Glossary

This document describes the common terminology used when describing standards and technology supporting APIs and Microservices.

ACORD Next-Generation Digital Standards API Security Guide

This document will describe potential levels of security that may be applied and provide guidance and structure definition for what could be used during implementation of API's.

ACORD Next-Generation Digital Standards Code List Specification Guide

This document describes the structures and guidelines for creating and using code lists within the standard.

ACORD Digital Standards Frequently Asked Questions (FAQ)

This document contains the most frequently asked questions about the standard with the corresponding answers.

ACORD Digital Standards Guiding Principles

This document describes the guiding principles which are the foundational elements for the global delivery of ACORD Next-Generation Digital Standards.

ACORD Next-Generation Digital Standards Implementation Guide

This document provides guidance and examples for how an implementer can use the standard resource objects to create their own implementation.

ACORD Next-Generation Digital Standards Introduction & Training Manual

This document is an introduction to the NGDS, what is available, and how to access information that may be required.

ACORD Digital Standards Naming & Design Rules Specification Guide

The Next-Generation Digital Standards Naming and Design Rules Specification documents the common JSON architectural functionality, naming conventions, design rules, schema representation, and data types that are used in Next-Generation Digital Standards Specifications.

ACORD Digital Standards User Guide

This document will describe how one can take the Next-Generation Digital Standards resources and use them to create specific implementations.

Master Resource Definition file

This file contains the metadata in JSON and YAML formats.

Microservices API Data Specification

This document describes and defines the specific business process of a user story. It contains information on the required resources with suggestions on how they can be used for implementation.

Microservices JSON & YAML Resource Definitions Files

The JSON and YAML resources definitions files used in a specific user story.

Microservices JSON & YAML Sample Implementation Files

The JSON and YAML implementation sample files associated with a specific user story.

Microservices JSON Example Payload

An example of a JSON payload (data being transferred) associated with a specific user story.

User Story Specification Document

This file will detail the requirements for a particular User Story/Business Process. It will contain a Resource Model and definitions for the Entity/Attributes used for this process, along with any specific requirements related to this task.

XML Schema & Sample Files (upon request only)

The XML schema and sample files generated upon request associated with a specific user story.

ABOUT ACORD

ACORD is the global standards-setting body for the insurance industry. For 50 years, we have been an industry leader in identifying ways to help our members make improvements across the insurance value chain. ACORD facilitates fast, accurate data exchange and efficient workflows through the development of electronic standards, standardized forms, and tools to support their use.

ACORD currently engages more than 36,000 participating organizations spanning over 100 countries, including insurance and reinsurance companies, agents and brokers, software providers, financial services organizations, and industry associations. ACORD maintains offices in New York and London.

Learn more at www.acord.org.

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