



Electronic Data Interchange Standards (EDI)
General rules for data submissions and data access requests

Document History

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A	June 2014	New Version of Standards	
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INTRODUCTION

An airport is a complex, evolving environment, and one that produces and processes a phenomenal amount of data.

The goals of these standards are to ensure a high quality sustainable environment that meets the needs of LAWA

LAWA has a building and infrastructure geospatial repository (AEGIS) and Drawing and Document Management System (DDMS), containing record (as-built) files, drawings and manuals that must be updated and maintained to the highest possible level.

The implementation of this standard framework allows BIM, CAD and GIS data to be integrated into AEGIS while preserving the referential and positional accuracy of the original measurements.

Purpose

This book is primarily directed at Surveys and Record (as-built) information project files.

Submittals prior to record (as-built) file completion are for guidance purposes only.

This Standard provides a framework for all data requests and all hard copy or electronic record (as-built) data submittals to or from LAWA, thus ensuring a streamlined data exchange process.



Record files must reflect the As-Built conditions

Information submitted prior to record file completion is for guidance purposes only

Who should read this book

This book is intended for all LAWA project partners and stakeholders, and especially for members of their staff who prepares information and drawings for submittal and use. It is provided to promote and support effective implementation of LAWA standards within the airport, for the complete facility life-cycle.

About this book

After the introduction, this book contains the following chapters and appendixes:

Standards in use at LAWA

Standards currently used for all LAWA projects, including software requirements and file organization

Data Requests:

Requesting information related to a LAWA project

Request of Variance:

Requesting permission to deviate from LAWA standards or procedures

Data Submittal Requirements

Submission of record drawings that reflect the as-built conditions for all building, infrastructure and survey projects.

Quality Assurance and Control

Consultant/Contractors quality assurance requirements.

Abbreviations

AEGIS	-	Airport Enterprise Geographical Information System
AIA	-	American Institute of Architects
ANSI	-	American National Standards Institute
BIM	-	Building Information Modeling
CAD	-	Computer Aided Design
CPPE	-	Capital Planning, Programming and Engineering
DDMS	-	Drawing and Document Management System
EPA	-	Environmental Protection Agency
FAA	-	Federal Aviation Authority
GIS	-	Geographical Information System
GISSSD	-	GIS Support Services Division
NCS	-	National CAD Standards
LAWA	-	Los Angeles World Airports
SDSFIE	-	Spatial Data Standard for Facilities Infrastructure and Environment

Standards in use at LAWA

LAWA Standards

This section provides an overview of LAWA specific standards, plus related federal, local, and national standards. LAWA standards have been created to improve productivity and reliable information exchange through the full life-cycle of Revit files, geospatial data, CAD drawings and related documents

LAWA Metadata Standards

Metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource. Metadata is often called data about data or information about information. LAWA has distinct metadata standards for:

- drawings and documents
- geospatial data sets

LAWA CAD Standards

The LAWA CAD standards are based largely on the AIA CAD Layer Guidelines and the National CAD Standards (NCS), adapted where necessary to suit LAWA-specific requirements. The document CAD Standards for LAWA Projects is available from the LAWA web site at

LAWA GIS Standards

The LAWA GIS standards are directly based on the ANSI Spatial Data Standard for Facilities Infrastructure and Environment (SDSFIE), Release 2.60, extended in certain areas to handle specific information relevant to LAWA. GIS Standards for LAWA Projects presents the most important aspects of SDSFIE as it applies to LAWA.

LAWA BIM Standards

These guidelines focus primarily on adaptation of standards for practical and efficient application of BIM, particularly at the handover (Record - As-Built) stage of a project.

Based on USACE_CAD-BIM_Technology Center: version 1.1 and National BIM standard (United States): version2

LAWA Survey Standards

The LAWA Survey and Remote Sensing Standards are based on requirements laid out in Airport Circulars published by the FAA, adapted where necessary to suit LAWA-specific requirements.



Failure to comply with these standards may result in organizations being back-charged for any financial costs incurred by LAWA for rectifying inconsistencies and errors

Data Format Requirements

Software packages and data formats used in the development, production and maintenance of all project files and documentations are identified in the relevant LAWA standards and project requirements.

To ensure that all project obligations will be met, consultants, contractors or suppliers are required to confirm the data format requirements with LAWA prior to commencing any works.

Failure to do so may result in file or document submittals being rejected by LAWA due to unacceptable formats.



See CAD, GIS and BIM standards for the software of choice within LAWA

Software version will be determined and enforced per project

File organization

Each project and discipline within a project will have its own project directory structure.

File structure and naming conventions are identified in the relevant LAWA standards and project requirements.

To ensure that all project obligations will be met, consultants, contractors or suppliers are required to confirm the file structure and naming conventions requirements with LAWA prior to commencing any works.

Failure to do so may result in file or document submittals being rejected by LAWA due to unacceptable conventions.

Data Requests (data waiver form):

A simple procedure for requesting data has been established, requiring the submittal of a “data waiver form” which includes contact information, project title and a description of the data requested.

Data waiver form is available in the appendix of this document or on the LAWA website. [LAWA Standard Documents and Guidelines](#)

The request will be considered for approval only after the requestor has fully accepted the terms and conditions stipulated within the form.

Terms and conditions

Data requester (“Transferee”) has asked Los Angeles World Airports (LAWA) to provide copies of certain Documents and/or CAD, BIM or GIS data files (“Data”) prepared by LAWA for the Project. LAWA agrees to provide Transferee with the requested Data, under the terms of this agreement.

1. The transfer of Data is not and shall not be deemed a sale. The data are instruments of service. LAWA shall be deemed the Data’s author and shall retain all proprietary rights, including any copyrights, embodied therein.

2. Transferee may transfer the data to its Contractors, Subcontractors, Suppliers, and Consultants (collectively “Others”), provided Transferee requires the others to be bound by this Agreement as if they were the Transferee in this Agreement. Transferee and Others may use the Data only for purposes related to this Project.

3. The Data are furnished “as is”. LAWA makes no representations or warranties, express or implied, of the Data’s merchantability or fitness for a particular purpose, with respect to the Data’s quality, adequacy, completeness, or sufficiency, or as to any results to be achieved by the Data’s use or the Data’s conformance with the as-built conditions.

4. Transferee acknowledges that anomalies and errors may occur when the Data is transferred electronically or used in an incompatible computer environment. Transferee solely accepts the risks associated with, and the responsibility for, any damages to hardware, software, computer systems, or networks related to the Data’s transfer or use. LAWA shall have no responsibility to provide software or training to allow Transferee to use the Data.

5. LAWA shall have no duty to modify or update the Data. LAWA may retain an archival copy of the Data, which shall be conclusive proof and govern in any dispute of the Data’s form or content.

6. Transferee agrees to indemnify, defend and hold LAWA, its officers, directors, employees, agents, and consultants harmless from and against any and all claims, liabilities, suits, demands, losses, damages, costs, and expenses, including, but not limited to, reasonable attorneys’ fees and all legal expenses and fees incurred through appeal, and all interest thereon, accruing to or resulting from any and all persons, firms or

any other legal entities on account of any damages or losses to property or persons, including, but not limited to, injuries, death or economic losses, arising out of Transferee's or Others' use, reuse, transfer, or modification of the Data, except where a court or forum of competent jurisdiction determines that LAWA is solely liable for such damages or losses.

7. If Transferee fails to perform or observe any of the terms of this Agreement, LAWA may demand, and Transferee immediately shall return, the Data and any copies thereof.

8. This Agreement shall be governed by the law of the location of LAWA's office identified at the top of this Data Waiver.

9. In any legal proceeding to enforce this Agreement, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs of defense.

10. Unless otherwise explicitly agreed to in writing by the parties, this Agreement shall govern any and all future data transfers to Transferee by LAWA.

Request of Variance

Compliance with the LAWA standards and data deliverables demands are the cornerstone of achieving trustworthy and relevant data.

Suggestions for improvements or extensions to these standards and demands are encouraged, to meet unforeseen requirements and as a way to improve effectiveness and clarify any ambiguities.

Sometimes a stakeholder does not have the ability to meet, or has a need to step outside the boundaries of the LAWA standards; any such deviation must be approved by LAWA, in advance and in writing. . Requests need to be submitted on the “Request for variance” form, this form along with other documentation related to these standards are available on the LAWA website. [LAWA Standard Documents and Guidelines](#)

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Data Submittal Requirements

LAWA requires the submission of record drawings reflecting as-built conditions for all building, infrastructure and survey projects.

The principal purpose of the record or survey files is to provide LAWA with a permanent record of actual construction and populate the central Geospatial data base (AEGIS) and Drawing and Document Management System (DDMS)

LAWA requires record information complete and coordinated, as soon as, or earlier for critical data than, construction completion.

	Record files must reflect the As-Built conditions Submitted files must be clean, purged and all error warnings cleared Information submitted prior to record file completion is for guidance purposes only
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- All links between drawings and reference files must be preserved and automatically reconstructed when data is submitted to LAWA
- Files containing significant errors will be rejected and returned to the submitter for correction and re-submittal.
- LAWA maintain the right to rework and make compliant the relevant data and back-charge the supplier for persistent errors or to avoid delays in uploading critical data into AEGIS or DDMS

Data Submittals to LAWA

Prior to submission, consultants and contractors must submit a detailed report of all files and documents that will be submitted.

Each update of the submittal overview must be transmitted to LAWA

Each file or set of files submitted will be accompanied with an official transmittal form



The contractor shall conduct a thorough quality control on all digital files and documents prior to submittal.

Submittal overview

Consultants and contractors must submit a detailed overview of all files and documents that will be submitted

The listing must be complete and relevant to LAWA

The submittal overview must be restricted to one project only

The report will be created in Excel format and must include (as a minimum):

- Project number
- Project Title and description
- Reference and version number of submittal overview
- Contact details of submitter
- File / document name and content description
- Project phase
 - 30% etc...
 - Record (as-built)
 - Survey
- Level of detail (development)
- Type of file and Software version
- Proposed date for file submission
- Accompanying comments

Transmittal Form

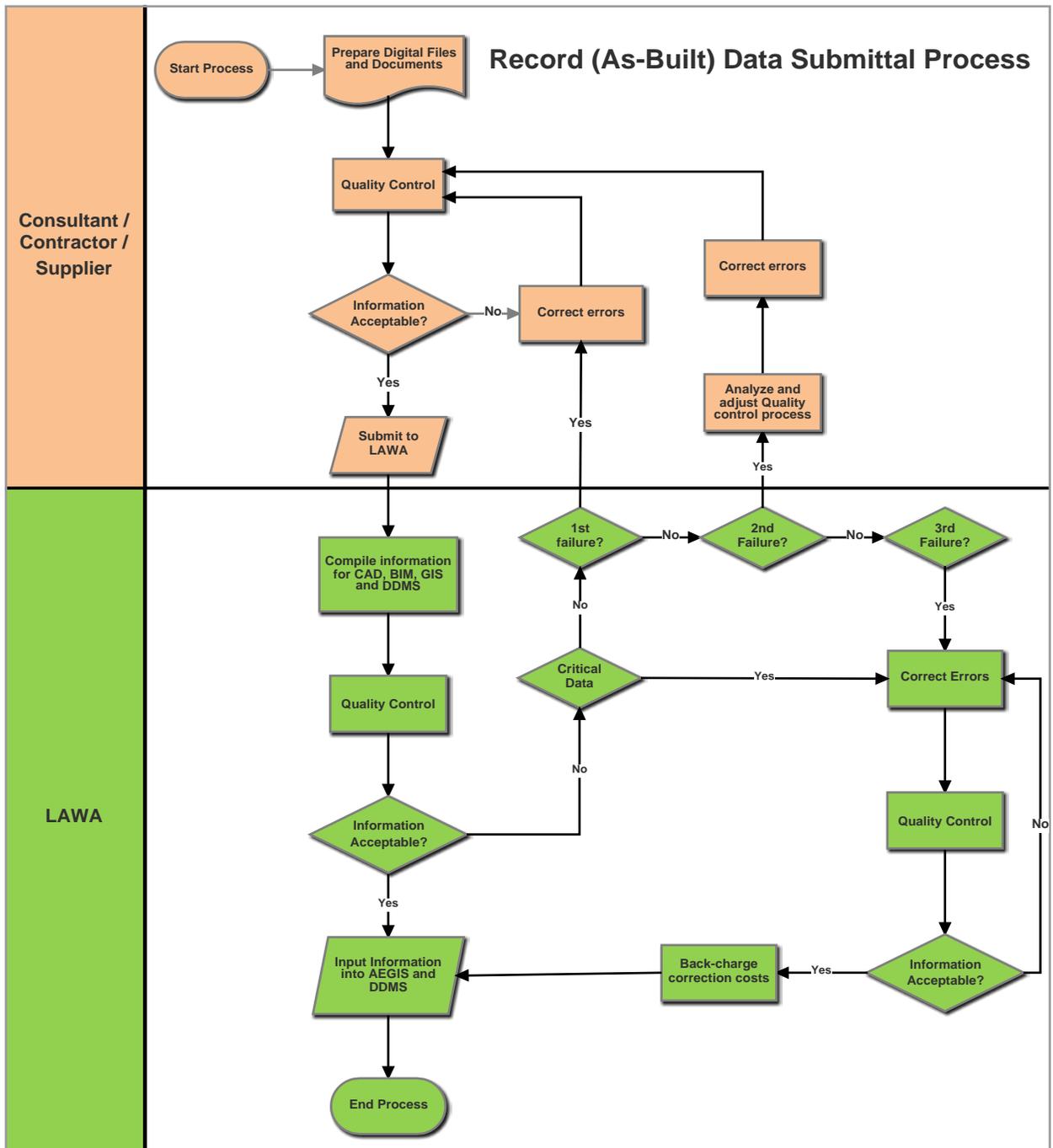
Each file or set of files submitted will be accompanied with an official submission document

The document must include (as a minimum):

- Project number
- Project Title and description
- Contact details of submitter
- Date of submittal
- File / document name and content description
- Start and end date dates of when data was collected, or time period which the submittal information represents
- Project phase
 - 30%
 - Record (as-built)
 - Survey
- Initial or updated submission
- If updated then a detailed description of corrections fulfilled
- Level of detail (development)
- Type of file and Software version
- Quality control status
 - Certifying the completeness and accuracy of the data and information
 - Compliance with LAWA standards
- Accompanying comments

Transmittal form is available at [LAWA Standard Documents and Guidelines](#)

Record (As-built) Data Submittal Process



	<p>The above process is applicable for all LAWA projects</p> <ul style="list-style-type: none">• Critical Data - all data correction cost will be back-charged to the submitter• 1st time QA failure: - files will be returned to the supplier for correction• 2nd time QA failure: - a review of the supplier's quality control processes will be demanded and a quality improvement plan implemented.• 3rd time QA failure: - all data correction cost will be back-charged to the submitter
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Quality Assurance and Control

LAWA uses its Quality Assurance and Control processes and procedures to manage the quality of its project data collection, generation, and use. The primary goal is to ensure that all project information is of sufficient quantity and quality to support the data's intended use.

Similar demands, also apply to all Consultants/Contractors supplying information to LAWA.

Upon request the Consultant/Contractor must submit their quality assurance project data plan for review.

Quality References

All quality plans should be broadly based around EPA's Quality System for Environmental Data and Technology. In particular "EPA Guidance for geospatial data quality assurance project plans" EPA QA/G-5G - March 2003

Copies of EPA Quality System Series documents may be obtained by downloading them from: www.epa.gov/quality

Quality Assurance Project Plan (QAPP) – a formal document describing the management policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of a consultant or contractor for ensuring the quality in its data and relevance to LAWA.

Quality improvement plan (QIP) – if persistent data quality issues occur the consultant/contractor must analyze their quality procedures and present a QIP to LAWA.

The quality improvement plan must include:

- assessment of their quality practices against LAWA standards and National Quality Standards
- identifying areas that require improvement
- contain a statement about the philosophy of the data quality requirements

Quality Assurance (QA) - an integrated system of activities involving quality planning, quality control, quality assessment quality reporting and quality improvement to ensure that all data meets the defined standards of quality with a stated level of confidence.

Quality Control (QC) the overall system of technical activities whereby the purpose is to measure and control the quality information and data so that it meets the needs of users. The aim is to provide quality data that is satisfactory, adequate, dependable and economical