

# Planning Guidelines and Design Standards

## A Joint Effort to Improve Checked Baggage Systems

### A LOOK BACK

After the attacks of September 11, 2001, the aviation industry supported the federal government's creation of the Transportation Security Administration (TSA) and the subsequent deployment of security improvements at airports across the country. Following a year of scrambling to implement checked baggage screening solutions at virtually every federalized airport throughout the nation, the TSA, with the dedicated help of its contractors, was able to meet the December 2002 congressional deadline to screen 100 percent of checked baggage. This accomplishment came with many lessons learned, some of which are reflected by our current standards. From operational concerns to bag tracking and jamming issues, designers had to learn a new way of designing systems with untested technology and limited exposure in the U.S. and were challenged by a new federal agency that was just beginning its process of self-actualization. Other than implementation in only a few international U.S. hubs and various overseas locations, these systems represented a change in outbound baggage processing methodology, with the insertion of a federal agency in the middle of the process.

After four years of tweaking installed systems and deploying new systems that still posed operational concerns, the Aviation Security Advisory Committee (ASAC) voted in 2006 to create a working group to identify funding and financing strategies for installing optimal checked baggage screening systems. This working group was composed of capable and experienced industry professionals who were called upon to develop standards of practice for the design and implementation of baggage handling systems at airports nationwide. They were to ensure the new systems offered the utmost in safety, efficiency, and security. The group that participated in this initial Baggage Screening Investment Study (BSIS) included representatives from airports, airlines, aviation

consultants, architects, engineers, baggage handling system designers and suppliers, and original equipment manufacturers (OEMs). Many of these professionals had been involved with some of the world's most complex baggage handling systems, continually building expertise through innovation, establishment of best practices and lessons learned. Over a period of one year, this group met to discuss design philosophies, examples of what had and had not worked and operational considerations when applied to the screening of checked baggage.

The primary objective of the BSIS was to outline an investment strategy for funding TSA's checked baggage screening program.<sup>1</sup> This study, which was submitted to the Office of Management and Budget (OMB), was considered the final component of TSA's strategic plan for checked baggage screening. The investment study recommended investment options, including bonds, appropriations for explosives detection systems (EDS) procurement and installation, and use of passenger facility charge funding.

In addition to investment strategies, the resulting product of the working group's diligent efforts was the initial release of TSA's *Planning Guidelines and Design Standards (PGDS) for Checked Baggage Inspection Systems (CBIS)* in October 2007. As stated on the TSA's website:

"The design principles and methods in the PGDS incorporate insights and experience of industry stakeholders, including airport and airline representatives, planners, architects, baggage handling system designers, and equipment manufacturers. The PGDS is intended to assist planners and designers in developing cost-effective solutions and to convey TSA requirements for checked baggage inspection systems. The PGDS emphasizes best practices associated with screening system layouts and addresses other factors necessary to actively manage system costs and performance."<sup>2</sup>

Other than the PGDS, the only guidelines for airport security has been the *Recommended Security Guidelines for Airport Planning Design and Construction*. The fourth and most recent revision of this document was published in May 2011.<sup>3</sup> This document was intended to be all-encompassing with regard to security consideration in airport design, yet not contradictory to the PGDS. As a result, the section on baggage systems simply summarizes and refers to the PGDS.

Since the initial release of the PGDS, almost all of our nation's CBIS installations have been designed, reviewed, and commissioned in accordance with the document. Following the initial release, the industry has seen innovation, continued lessons learned, and emerging threats that have changed the way in which we think about security of checked baggage. As a result, TSA has released several updates to the document, with version 4.1 being released September 15, 2011.

### COLLABORATION TIMELINE

In recent years, industry involvement in subsequent releases waned. Following the release of the first couple of versions, TSA's in-house subject matter expertise began to grow. Through insourcing and reorganization, follow-on working groups outside of TSA and their immediate contractors never materialized, thus limiting industry engagement in not only design best practices, but in commissioning processes and procedures as well. Although a procedure was established whereby comments to the most current version could be digitally submitted for potential incorporation, the general opinion of the industry was that the voices of the "boots on the ground" were not being heard. Stemming from collective feedback received within the ACC Safety & Security Committee in early 2012, a proposal was presented to TSA to formally re-engage a collaborative task force comprised of CBIS subject matter experts from the industry

<sup>1</sup> Aviation Security Advisory Committee Working Group Report: *Baggage Screening Investment Study Prepared for the Aviation Security Advisory Committee*, August 9, 2006.

<sup>2</sup> <http://www.tsa.gov/research-center/updated-planning-guidelines-and-design-standards-checked-baggage-inspection-systems>

<sup>3</sup> [http://www.tsa.gov/sites/default/files/assets/pdf/airport\\_security\\_design\\_guidelines.pdf](http://www.tsa.gov/sites/default/files/assets/pdf/airport_security_design_guidelines.pdf)



and TSA to update the PGDS' content and format. In response to TSA's request to industry to draft recommended changes to PGDS, collaboration between ACC and the International Association of Baggage System Companies (IABSC) was formed. The resultant task force kicked off in March 2012 in Dallas, TX to collect and consolidate industry comments and minimize conflicts or duplicates for transmittal to TSA. Due to the size and complexity of the PGDS, the task force divided into six separate teams responsible for various chapters and appendices, with the ultimate goal of consolidating into one draft redlined document.

In May 2012, following the diligent work of this group to establish consensus and produce an all-encompassing document that was representative of the industry's comments, a ballot was issued along with the document to both members and non-members of ACC and IABSC for voting on recommended changes. Results were tallied, and transmitted to TSA, with the understanding that a response would be returned for further discussion. In June of that same year, key leaders from the task force met with members of TSA's Office of Security Operations, Operational Improvement Branch, and the Office of Security Capabilities Operational Support division to discuss the comments and provide initial feedback. Although discussions were fruitful and constructive with regard to the overall structure and intent of the document, the response was less than enthusiastic. The TSA was not expecting a complete re-write of the document. However, in the spirit of partnership, the TSA agreed to review the comments and provide an official response.

## PROGRESS

After months of deliberation, a response was received in the spring of 2013. Although the plethora of comments received would not be completely incorporated into a forthcoming

PGDS version, TSA officially endorsed the re-creation of a joint TSA-industry working group that would meet quarterly. Representation from interested firms was solicited through ACC, ACI, AAAE and IABSC, and many from the original BSIS were anxious to re-engage. The first quarterly meeting was held at the TSA Systems Integration Facility (TSIF) in Washington, DC in July 2013 and a group charter and goals for subsequent meetings were established. Additionally, it was envisioned by all parties that the first year goal of this working group would be the publication of version 5.0 of the PGDS in early 2014.

The U.S. federal government shutdown slowed TSA participation, but has not halted progress. The following is a summary of some of the broader goals established for discussion and creation of action items for participating industry partners:

- 1) Finalize the working group charter;
- 2) Define requirements vs. best practices;
- 3) Develop a common definition of performance specification and define appropriate variances/ tolerances; and
- 4) Begin defining strategies for risk-based screening detection capabilities.

## 2014 AND BEYOND

What does the future hold? Collaboration between TSA and the aviation security industry with respect to checked baggage is back on track and the future remains hopeful. Taking the ongoing effort of recapitalizing aging equipment and infrastructure, while recognizing the continued financial burdens by airports and the downward trend of federal funding, all stakeholders must work together to ensure safe, optimal, efficient, cost-effective screening solutions that meet the



needs of the traveling public while making the best use of taxpayers' dollars. One can envision incorporation of risk-based solutions into all future solutions, as well as harmonization between the U.S., the European Union, and other international partners. ✈

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