SAE J3187
STPA RECOMMENDED PRACTICES

MIT STAMP WORKSHOP
JUNE 06, 2022

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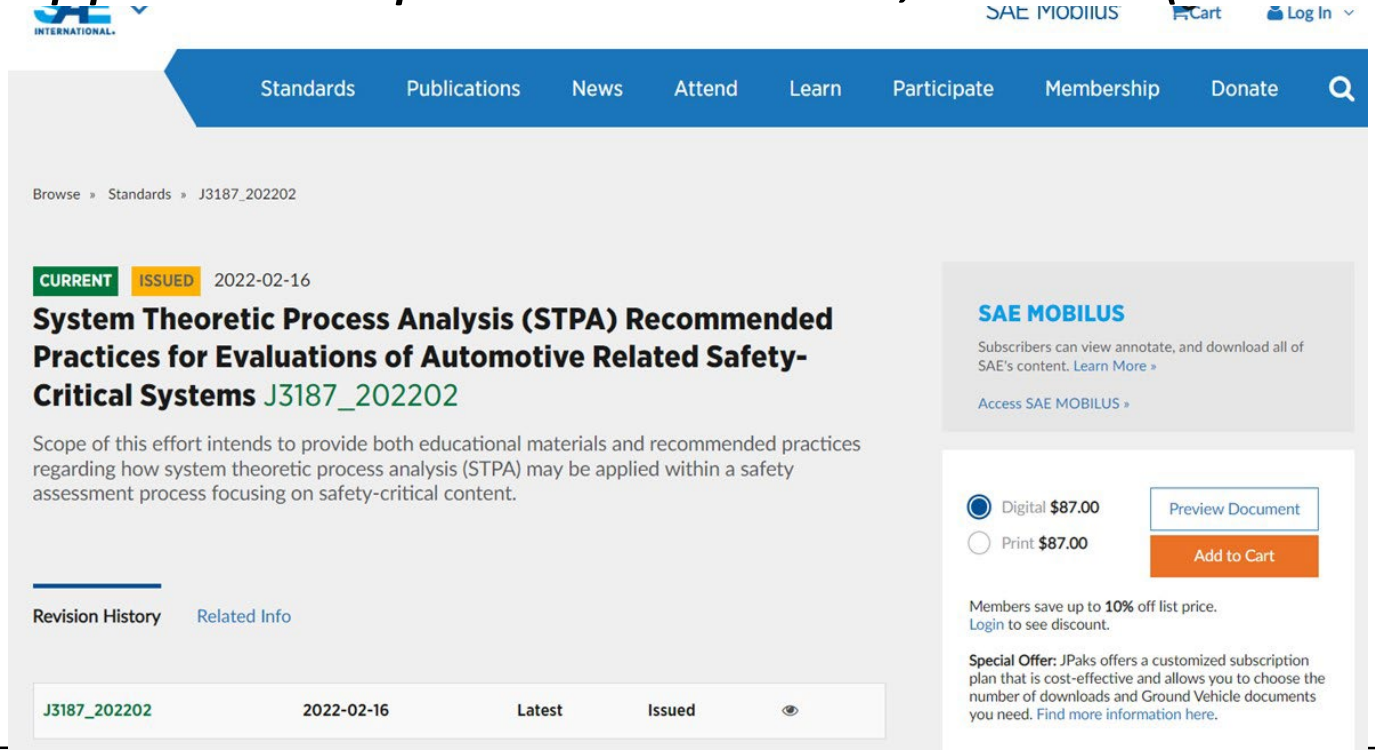
Making Presentation as the SAE J3187 Task Force Chair

SAE J3187

J3187 SAE Recommended Practices for Automotive Safety Critical Applications published Feb 16, 2022 – (SAE website)



SAE J3187 Task Force - 75 members - 47 organizations

AeroPacific Consulting LLC
AFRL
Andrew Smart Consulting LLC
ANSYS
APTIV
Autonomous Solutions, Inc
Boeing
Continental (Germany)
Cruise
Cummins Inc
Daimler Truck North America
Dana
Dura Automotive
Edge Case Research
Elektrobit Automotive GmbH
Encoresemi
Exida
FCA
Ford
General Motors
Immersion Corporation
INVENSITY GmbH
ISDEFE
Luminar Technologies
Magna Electronics Inc
Mercedes-Benz USA
MIT
Nissan
Northrop Grumman Corporation
NVIDIA
Omnex
Parthenon
Qualcomm
Rolls Royce
SAE Member
SAE ORAD Working Group
Scopus Systems
Siemens PLM Software Inc.
Stellantis
SZ DJI Technology Co., Ltd.
TIER IV
Toyota
Valeo
VOLPE
Waymo
WMG - Univ Warwick
ZOOX

SAE J3187 - SAE STPA Recommended Practices

The publication of J3187 marks the conclusion of a three (3) year effort to develop and publish first authoritative document addressing the use of STPA for system critical system evaluation

While J3187 may have started with an automotive focus, during its development, content making it valuable to other industries has been added to produce a more comprehensive document useful to aerospace, defense, regulatory agencies, etc.

SAE J3187 - SAE STPA Recommended Practices

The scope J-3187 intends to provide both educational materials and recommended practices regarding how system theoretic process analysis (STPA) may be applied within a safety assessment process focusing on safety-critical content.

Its purpose is to align industry best practices and translate them across industry regarding the implementation and use of STPA across human- and software-intensive systems (controls, human machine interactions (HMI), autonomous, etc.), and to explore focus areas suited for STPA use, or for supplementing other safety tools.

SAE J3187 - SAE STPA Recommended Practices

J3187 was written by experienced STPA practitioners who shared their collective knowledge on how to perform STPA evaluations and how to develop appropriate safety requirements to prevent or manage potential hazards discovered during the STPA process.

Through the STPA process, these safety requirements can prevent or manage scenarios, that could lead to system misbehaviors, which may produce risk, that may result in unwanted losses, human harm, property damage, etc.

In addition, J3187 includes lessons learned by these practitioners while executing STPA evaluations so that others may benefit from their experiences and missteps.

SAE J3187 - SAE STPA Recommended Practices

SURFACE VEHICLE RECOMMENDED PRACTICE	J3187™	FEB2022
	Issued 2022-02	

System Theoretic Process Analysis (STPA) Recommended Practices for Evaluations of Automotive Related Safety-Critical Systems

RATIONALE

Scope of this effort intends to provide both educational materials and recommended practices regarding how system theoretic process analysis (STPA) may be applied within a safety assessment process focusing on safety-critical content.

Purpose of this task force is to align industry (starting with, but not limited to, automotive/aerospace) best practices and translate them across industry regarding the implementation and use of STPA across human- and software-intensive systems (controls, human machine interactions (HMI), autonomous, etc.), and to explore focus areas suited for STPA use, or for supplementing other safety tools.

SAE J3187 - SAE STPA Recommended Practices

TABLE OF CONTENTS

SAE J3187 - SAE STPA Recommended Practices

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The cross-industry task force that developed SAE J3187 STPA Recommended Practices hopes the content provides useful information to those who desire to leverage the powerful attributes of STPA for system safety evaluations and looks forward to helpful feedback to improve its content in the future

Initial High Level Task Force 2022 Activities:

- Need to gather feedback from members on existing content (April – June 22)
- Develop updated J-3187 content based on feedback for late summer or early fall balloting by Functional Safety Committee (allows short term enhancements)
- Define and agree on additional content for J-3187 (Software examples, cybersecurity, more non-automotive applications, etc.) and schedule activities to see if additional 2022 release is appropriate or for an early 2023 release
- Develop more non-automotive content and examples in 2022

SAE J3187 - SAE STPA Recommended Practices

The Task Force will be preparing to work on the following items to remove concerns that are under discussion in the SAE Functional Safety Committee as part of initial feedback is that J3187 is thought of as an “automotive only” document:

Keep J3187 as Recommended Practices document:

- Eliminate the “cues” indicating automotive only aspect
- Rewrite J3187 Title, Scope, Purpose, and Introduction sections to clearly communicate that J3187 is a broad, useful document for all industries

Use this updated Recommended Practices document as way to start progression to have J3187 as a standard:

- Explain content to other organizations
- Invite and gain participation from other organizations in creating an SAE J3187 standard
- Understand how being a standard may impact potential users and organizations
- Handle the “state of the art” perspective and arrive at consensus

J3187 Feedback from Follow STPA Practitioners is Welcomed

Special thanks to all the STPA Task Force members who made J3187 a reality !!

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?? Questions on Today's Content ??

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