NATIONAL FIRE PROTECTION ASSOCIATION
The leading information and knowledge resource on fire, electrical and related hazards

Correlating Committee on Professional Qualifications
First Draft Meeting for NFPA 2400

Web/Teleconference Meeting

April 9, 2018
1:00pm – 2:00pm ET

Remote Connection Option:
(866) 398-2885 Guest Code: 237983#
Connect Web: https://nfpa.adobeconnect.com/rfash/

Agenda

1. Call to Order - Chair William Peterson
2. Introduction of Members and Guests
3. Chair's Remarks and Purpose of Meeting (Authority/Responsibilities)
4. NFPA Staff Liaison report – Bob Fash
5. NFPA 2400 - *Standard for Small Unmanned Aircraft Systems (sUAS) used for Public Safety Operations*), Professional Qualifications), Position Chapters.
6. Next face-to-face meeting, June 8-9, 2018, Las Vegas, NV.
7. Adjourn at the Close of Business

Address List No Phone

04/02/2018
Robert Fash
PQU-AAC

Professional Qualifications

William E. Peterson **M** 1/1/1990
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Richard A. Dunn **E** 11/30/2016
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Principal **PQU-AAC**
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Pennsylvania State Fire Academy
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Principal **PQU-AAC**
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Dalan Lee Zartman **U** 04/05/2016
Principal **PQU-AAC**
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Alex Zielinski **SE** 12/06/2017
Principal **PQU-AAC**
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Thomas W. Aurnhammer **U** 10/23/2013
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International Fire Service Accreditation Congress
Principal: Tracie M. Young-Brungard

David W. Lewis **L** 10/23/2013
Alternate **PQU-AAC**
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National Volunteer Fire Council
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Stephen P. Austin **L** 1/18/2001
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Dave E. Hanneman **U** 10/27/2005
Nonvoting Member **PQU-AAC**
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Edward M. Hawthorne **U** 7/26/2007
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Orlando P. Hernandez **E** 12/06/2017
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Robert Fash 10/24/2016
Staff Liaison **PQU-AAC**
National Fire Protection Association
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Quincy, MA 02169-7471

Item 3

3.4.2 Authority.
A Correlating Committee shall direct the activities of the Technical Committees that have primary responsibility for the development and revision of NFPA Standards assigned to them. The Correlating Committee shall be responsible for resolving conflicts, achieving correlation among the recommendations of the Technical Committees, correcting errors and omissions, and ensuring that the Committee activities have been conducted in accordance with these Regulations and any approved Supplemental Operating Procedures (see 3.3.8). The Correlating Committee shall have the authority to choose between alternatives presented by the Technical Committees and to write text, but only as necessary for correlation, consistency, and the correction of errors and omissions.

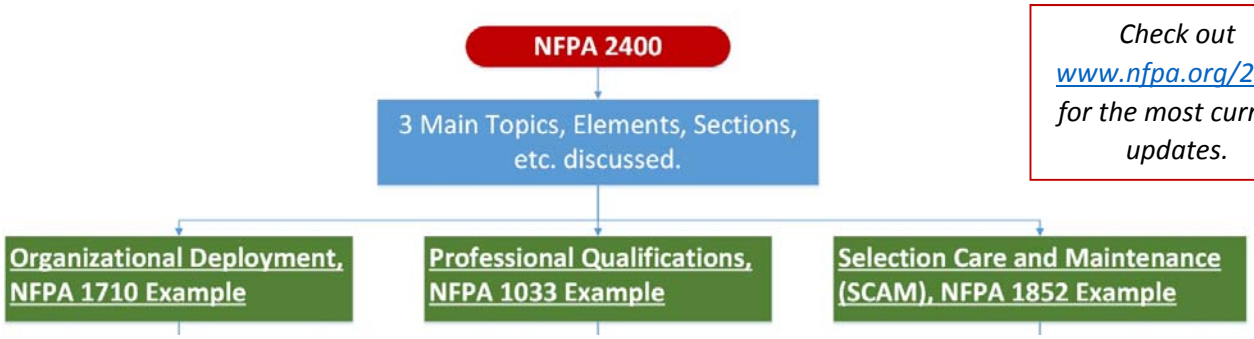
3.4.3 Responsibilities.
The responsibilities of a Correlating Committee are:
(a) Resolving conflicts within or between NFPA Standards
(b) Recommending the resolution of conflicts between overlapping functions in Technical Committee Scopes
(c) Recommending the establishment of new or the discharging of existing Technical Committees and proposing new Scopes or changes to existing Scopes of Technical Committees
(d) Recommending changes in membership to obtain or improve representation on a Technical Committee
(e) Correlating the scheduling of the Reports from the Technical Committees operating under its responsibility
    1. Notifying a Technical Committee of its failure to comply with these Regulations or the Manual of Style for NFPA Technical Committee Documents
(f) Determining whether the Technical Committee has given due consideration to all evidence presented to it in connection with the preparation of its Report, including all comments relating to negative votes
(g) Establishing Supplemental Operating Procedures, if desired (see 3.3.8)
(h) Performing such other or different duties as the Standards Council may from time to time assign

Item 5

Michael T. Wixted, MIFireE
Emergency Services Specialist
NFPA

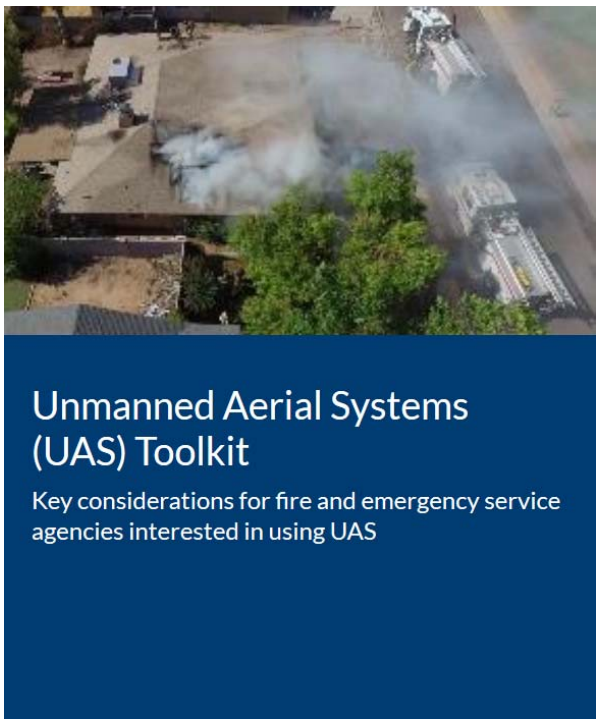
Topic: NFPA's new standard on Small Unmanned Aircraft Systems (sUAS)

Project Specifics: NFPA 2400, *Standard for Small Unmanned Aircraft Systems (sUAS) used for Public Safety Operations* is currently in draft development with a target completion date of December 2017 for public review. It applies to all public safety departments with Unmanned Aircraft Systems (UAS), including fire service, law enforcement, emergency medical services, and any combination thereof. The standard aims to cover the following technical content:



Check out www.nfpa.org/2400 for the most current updates.

Other Points of Interest: The following is a sample of additional guidance provided by other organizations in relation to the topic. Such sources of information can form the basis of NFPA Standards.



Courtesy of the International Association of Fire Chiefs (IAFC)

If you're thinking about deploying a sUAS or UAS operation, checkout the toolkit provided by the International Association of Fire Chiefs (IAFC) at **https://www.iafc.org/topics-and-tools/resources/resource/unmanned-aerial-systems-uas-toolkit**.

Although the regulations and operations are based on the Federal Aviation Administration (FAA), the other topics may be useful outside of the U.S.A. as well.

Also, the joint report from EENA and DJI on "The use of Remotely Piloted Aircraft Systems (RPAS) by the emergency services" provides guidance and recommendations (checkout http://www.eena.org/pages/dji-eena#.WKsHdvK3xW4 for a whitepaper and webinar).

NATIONAL FIRE PROTECTION ASSOCIATION
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NFPA's new standard on Small Unmanned Aircraft Systems (sUAS)

NFPA's First UAS Public Safety Effort (NFPA 2400)

June 1, 2017 | Michael Wixted, Emergency Services Specialist

MWixted@nfpa.org or 617-984-7947

NATIONAL FIRE PROTECTION ASSOCIATION

The leading information and knowledge resource on fire, electrical and related hazards

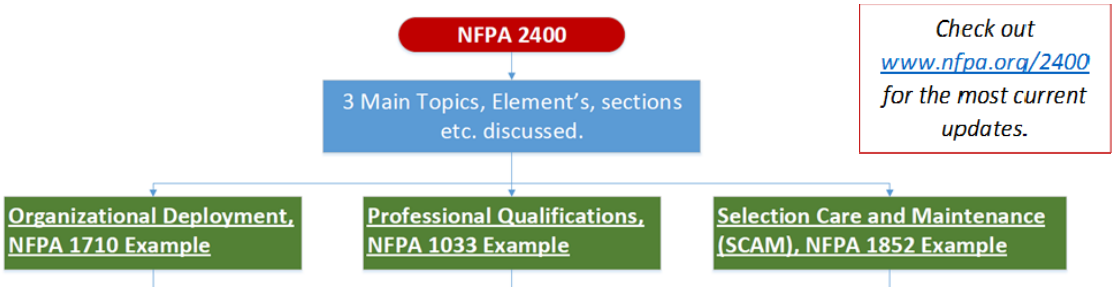
Founded in 1896

300 employees

200+ technical code & standard development committees

Offices in the United Arab Emirates, Canada, Mexico, France & China

Standard for Small Unmanned Aircraft Systems (sUAS) used for Public Safety Operations



- It applies to all public safety departments with sUAS
  - Fire service
  - Law enforcement
  - Emergency medical services

Current NFPA 2400 Draft (3 in 1)

History
- New project request approved August, 2016
- First TC in-person meeting January, 2017
- Second TC in-person meeting May, 2017

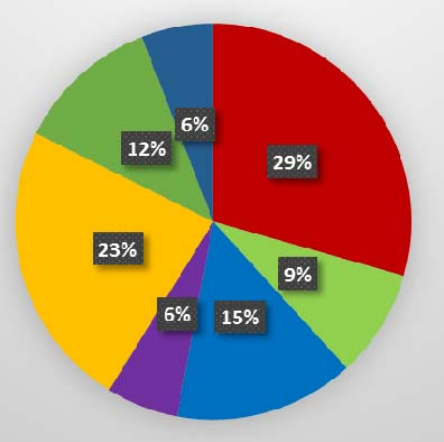
- What should you expect to see in NFPA 2400?
  - Small Unmanned Aircraft Systems (sUAS)
  - Policies & procedures
  - RPIC & Visual Observer

- **Policies & procedures?**
  - Administrative
  - Operational procedures
  - Personnel qualifications and training
  - Safety
  - Maintenance

Committee Roster (34 approx.)

Class U	Class I/M	Class E	Class L	Class SE	Class M	Class RT

- Fire Service
  - IAFC, IAFF, California State Firefighters' Association, FDNY, County F&R, etc.
- Law enforcement
  - Sheriff's Dept. (IAB SME), NIJ/DOJ, DHS, ALEA, Las Vegas Metro PD, etc.
- EMS
  - Private Ambulance, EMS Chiefs (app.)



Program
- Mission objectives
- Environmental conditions
- Resources
- Cost-benefit analysis

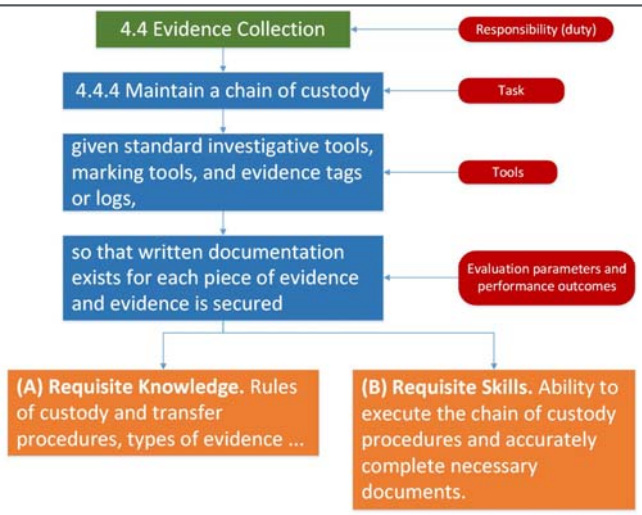
Needs
- Mission objectives
- Risk assessment
- Availability and capability of resources

i.e., purchase specification

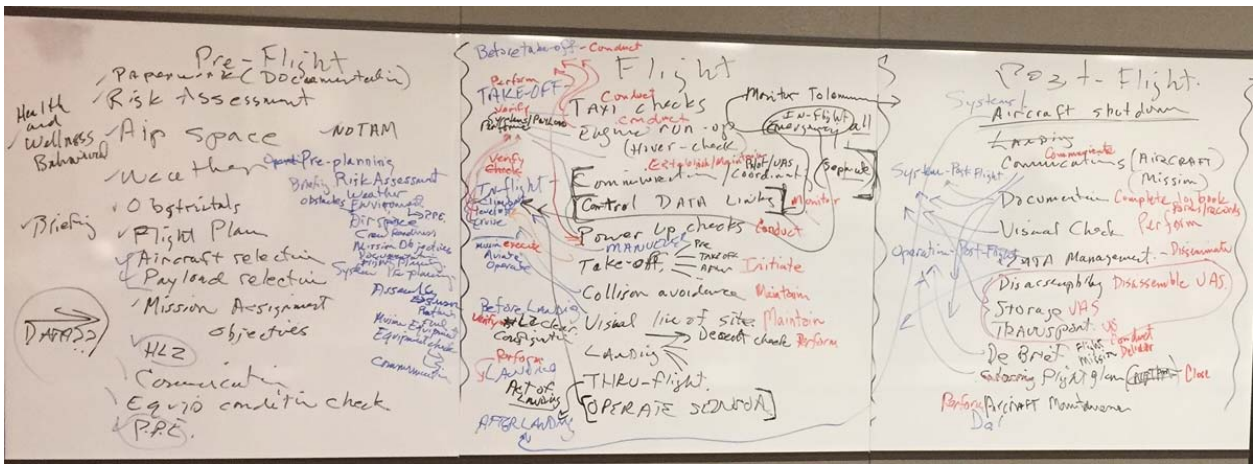
What else?

- sUAS program criteria
- Operational needs assessment
- sUAS selection
- Concepts of operations (ConOps)

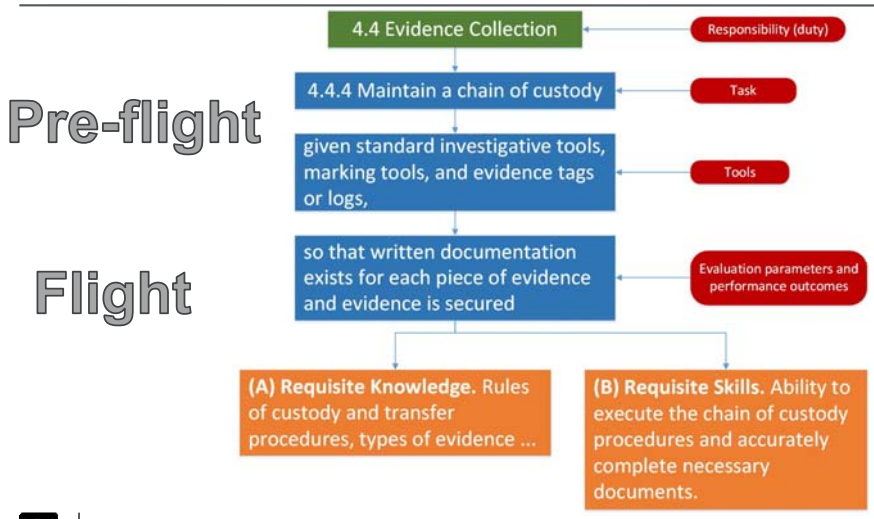
RPIC & Visual Observer JPRs (NFPA 1033 Example)



RPIC & Visual Observer JPRs (NFPA 1033 Example)



RPIC & Visual Observer JPRs (NFPA 1033 Example)



Service

- Cleaning
- Disinfecting or decontamination
- Operational applications
- Operating environment

i.e., authorized personnel

You have more!!!

- sUAS maintenance program
- Routine service
- Maintenance records
- Maintenance programs

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M E M O R A N D U M

TO: Technical Committee on Unmanned Aircraft Systems

FROM: Elena Carroll, *Project Administrator*

DATE: April 2, 2018

SUBJECT: NFPA 2400 First Draft Technical Committee FINAL Ballot Results (Cust2020)

According to the final ballot results, all ballot items received the necessary affirmative votes to pass ballot.

39 **Members Eligible to Vote**
14 **Members Not Returned** (Butters, Carlson, Dibona, Ison, Kenney, Kessler, Looney, Lusk, Miles, Murphy, Norton, O'Shea, Reyes, Schecter)

The attached report shows the number of affirmative, negative, and abstaining votes as well as the explanation of the vote for **each** revision**.**

To pass ballot, **each** revision requires: (1) a simple majority of those eligible to vote and (2) an affirmative vote of $^{2}/_{3}$ of ballots returned. See Sections 3.3.4.3.(c) and 4.3.10.1 of the ***Regulations Governing the Development of NFPA Standards***.

First Revision No. 35-NFPA 2400-2017 [Global Input]

(See attached word file for new Annex C.)

(Renumber subsequent sections i.e. existing Annex C now becomes Annex D)

Supplemental Information

File Name	Description	Approved
FR_35_Annex_C.docx	See new Annex C. For staff use	
Annex_C.docx		

Submitter Information Verification

Submitter Full Name: Michael Wixted
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Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 08:13:08 EST 2017

Committee Statement

Committee Statement: This JPR matrix is being added for correlation and consistency across all NFPA professional qualification standards.
Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

Annex C An Overview of JPRs for RPIC and Visual Observer

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

C.1 RPIC and Visual Observer.

The matrices shown in Table C.1 are included to provide the user of the standard with an overview of the JPRs and the progression of the various levels found in the document. They are intended to assist the user of the document with the implementation of the requirements and the development of training programs using the JPRs.

Table C.1 RPIC and Visual Observer

RPIC	Visual Observer
Pre-Flight	
5.3.1.1 Plan sUAS operations given mission objectives and goals, resources, environmental conditions, and scenarios, so that a mission plan is completed that aligns with the mission objectives and goals, identifies the resources required, assesses the risks associated with the mission, and identifies the operational tasks necessary to complete the mission.	**5.4.1.1** Evaluate operational role given a mission plan, RPIC, and sUAS operation, so that operational tasks necessary to support the mission are identified, listed, and communicated to the RPIC.
5.3.1.2 Prepare the sUAS operation given a mission plan and resources, so that the sUAS is operated by confirming a state of readiness that demonstrates possession, configuration, and operational functions are checked and verified as operational.	
Flight	
5.3.2.1 Perform take-off under the regulatory requirements as determined by the AHJ given a specific sUAS and confirmed state of readiness, so that the sUAS takes off after having completed system checks and flight is initiated and maintained in a manner compliant with regulatory requirements.	
5.3.2.2 Maintain visual line of sight given an sUAS in flight along a designated flight path under the regulatory requirements as determined by the AHJ, so that the sUAS is maneuvered in a manner that avoids obstacles and reaches targeted locations and altitudes without losing line of sight of the sUAS in accordance with the approved operational flight plan.	**5.4.2.1** Maintain visual line of sight of the sUAS given an RPIC and sUAS in flight along a designated flight path under the regulatory requirements as determined by the AHJ, so that obstacles are identified and communicated to the RPIC prior to a potential collision and in a time that allows for corrective action.
5.3.2.3 Perform aerial maneuvers given an sUAS in flight within a designated airspace under the regulatory requirements as determined by the AHJ, so that the operator demonstrates positive aircraft control in accordance with the approved operational flight plan.	
5.3.2.4 Perform payload functionality given an sUAS in flight within a designated airspace under the regulatory requirements as determined by the AHJ, so that the sUAS is maneuvered in a manner that avoids obstacles and demonstrates payload	

RPIC	Visual Observer
Pre-Flight	
drop, payload application, or data acquisition at targeted locations in accordance with the mission plan. **5.3.2.5** Perform pre-landing procedures given an sUAS in flight within a designated airspace under the regulatory requirements as determined by the AHJ, so that the sUAS is maneuvered in a manner that avoids obstacles while reaching a clear landing area, establishes a configuration for landing, and confirms a decent path free of obstructions. **5.3.2.6** Perform a landing given an sUAS in flight within a designated airspace under the regulatory requirements as determined by the AHJ and having completed pre-landing procedures, so that the sUAS is maneuvered in a manner that avoids obstacles and is able to touch down at a clear landing area and ceases operational functions without any damage to the sUAS.	
Post-Flight	
5.3.3.2 Conduct a mission debrief given a mission plan and ended sUAS operation, so that the operational tasks necessary to complete the mission are identified as complete, incomplete, or deviated from the designated mission plan for specific reasons. **5.3.4.1** Complete post-flight procedures given an sUAS that has performed a successful landing, so that the sUAS is visually inspected for damage, configured for transport and storage, confirmed ready for service through immediate maintenance, or out of service for scheduled maintenance.	

First Revision No. 38-NFPA 2400-2017 [Global Input]

Change "given sUAS" to "given a sUAS" and "so that the sUAS are" to "so that the sUAS is" for all JPRS (sections 5.3.3.1 through 5.3.4.2).

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 18:46:05 EST 2017

Committee Statement

Committee Statement: This is an editorial correction to align with changes proposed in FR-25 where "given sUAS" was changed to "given a sUAS" and FR-30 where "so that the sUAS are" was changed to "so that the sUAS is" to address confusion about multiple sUAS. The JPRs relate to the operator of a single sUAS.

Staff Note: This is an editorial revision to apply changes made by the committee in other FRs in order to achieve correlation and consistency across the standard.

Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 43-NFPA 2400-2018 [Detail]

(Delete heading 5.3.3 In-Flight and renumber subsquent sub-sections i.e. 5.3.3.1 through 5.3.3.5 now becomes 5.3.2.3 through 5.3.2.6)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 11 13:46:41 EST 2018

Committee Statement

Committee Statement: The committee agrees the terms flight and in-flight are confusing. These sections can be combined into a single section for duties associated with flight for greater clarity. This First Revision renumbers the appropriate sections.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
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Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 44-NFPA 2400-2018 [Detail]

Change/move existing 4.6.7 to 4.6.1.11*

4.6.1.11*

Contaminated sUAS shall be decontaminated in accordance with the policies and procedures established by the public safety entity.

and insert the following annex:

A.4.6.1.11

Public safety entities should be aware of the potential for contaminated sUAS to cross-contaminate other areas if it is allowed to leave the warm zone prior to decontamination or the sUAS returns home due to the loss of communications link.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 08 07:22:06 EST 2018

Committee Statement

Committee Statement: This committee intended to include this guidance in the initial draft. In the process of combining different sections it got removed. Contamination of a UAS that leaves a warm zone is a potential hazard public safety entities need to be made aware of.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
20 Affirmative All
3 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.

Carlson, Brian

Dibona, Chris

Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Dershowitz, Adam

Instead of "leave the warm zone" perhaps "leave the contaminated zone" I first read this and thought that it related to changes in weather.

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 1-NFPA 2400-2017 [Section No. 1.3.1]

1.3.1

This standard shall apply to non-public entities who ~~support~~ conduct sUAS operations for public safety ~~entities~~ .

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 12:20:02 EST 2017

Committee Statement

Committee Statement: This change allows for an industrial unit that provides emergency response services without reporting to a specific public safety entity. The text as written would have excluded such emergency services that operate in an industrial setting. An example would be an industrial fire brigade using NFPA 2400 for UAS deployment in public safety operations.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 2-NFPA 2400-2017 [Section No. 1.5]

1.5* Enforcement.

This standard shall be administered and enforced by the authority having jurisdiction.

A.1.5

For example, the AHJ includes the aviation regulatory authority having jurisdiction. In the United States, this is the FAA. Internationally, this is the applicable national civil aviation authority.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 12:40:42 EST 2017

Committee Statement

Committee Statement: This Annex provides guidance to the enforcing body that AHJ can mean the applicable aviation authority.
Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 47-NFPA 2400-2018 [Section No. 1.6.3]

1.6.3

Chapter 6 shall include minimum requirements for the maintenance of sUAS when used for ~~operations supporting~~ public safety ~~entities~~ operations .

Supplemental Information

File Name	Description	Approved
1.6.3_track_changes.docx	For staff use	

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Mar 06 08:26:49 EST 2018

Committee Statement

Committee Statement: This is an editorial First Revision to match changes the committee made in section 1.6.1. The section needs to align due to the structure of the document.
Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 3-NFPA 2400-2017 [Section No. 2.3.1]

2.3 Other Publications.

2.3.1 U.S. Government Publications.

U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 14, Code of Federal Regulations, Part 107, "~~Operation and Certification of~~ Small Unmanned Aircraft Systems," 2016.

FEMA — ICS Glossary, Incident Command System Training, 2008.

2.3.2 Other Publications.

Merriam-Webster's Collegiate Dictionary , 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 12:52:40 EST 2017

Committee Statement

Committee Statement: Updating to the correct reference.
Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 10-NFPA 2400-2017 [New Section after 3.3.2]

3.3.4 Digital Media Evidence (DME).

The digital recording of images, sounds, and associated data with probative value stored or transmitted in binary form.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 14:08:11 EST 2017

Committee Statement

Committee Statement: The committee agrees data retention and management is a very important part of sUAS operations and should have a separate section within Chapter 4. The additional requirements provide guidance on the minimum elements a public safety department should consider when developing data retention policies and procedures.

Staff Note: This change relates to FR-11 and proposed new sections 4.3.4 through 4.3.7.

Response Message:

Public Input No. 36-NFPA 2400-2017 [Section No. 4.3.2]

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 17-NFPA 2400-2017 [New Section after 3.3.2]

3.3.3 Designated Operations Area.

The operating area or location defining the volume in the airspace to include altitude in Above Ground Level (AGL) or Mean Sea Level (MSL), and defined geographical operational perimeter for a given public safety mission.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 11:52:17 EST 2017

Committee Statement

Committee Statement: This definition was added as a necessary term in relation to the new requirements for multiple sUAS operations.

Staff Note: This change relates to FR-16 and additional requirements proposed for Multiple Aircraft Operations in Chapter 4.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 28-NFPA 2400-2017 [New Section after 3.3.5]

3.3.9 Positive Aircraft Control.

Consistently maintaining appropriate control of the aircraft, regardless of the phase of flight or potential distraction of other required tasks. (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 20:31:38 EST 2017

Committee Statement

Committee Statement: The definition was added as a result of changes to the aerial maneuvers JPR. The committee looked at adding more skillsets to the maneuvering JPR. However, this technology is still relatively knew in the public safety arena and as a result it was decided to keep the maneuvering JPR at a high level to allow greater industry use. Instead an annex identifying existing test methods under development by NIST was added to provide some sample means to test RPIC proficiency.

Staff Note: This change relates to FR-27 and changes to requirements proposed for perform aerial maneuvers in Chapter 5.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 46-NFPA 2400-2018 [New Section after 3.3.7]

3.3.7 Maintenance Program.

A maintenance program is a system or set of procedures for the continuous maintenance of the sUAS in order to ensure air-worthiness.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 16 14:18:47 EST 2018

Committee Statement

Committee Statement: This an editorial revision to add the definition of Maintenance Program based on First Revision No. 32. No changes to the definition have been made.
Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 4-NFPA 2400-2017 [Section No. 3.3.8]

3.3.12 Remote Pilot in Command (RPIC).

The person ~~that~~ who has been found by the public safety entity to be properly qualified to exercise the privileges of remote pilot and has the final authority and responsibility for the operation and safety of sUAS operation as determined by the authority having jurisdiction (AHJ). (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 13:10:20 EST 2017

Committee Statement

Committee Statement: The committee wants to emphasize that it's up to public safety entity to determine who's qualified from their department.

Staff Note: This change relates to FR-6 and changes to the same RPIC definition found in Chapter 5 Professional Qualifications for sUAS Public Safety Personnel.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 5-NFPA 2400-2017 [Section No. 3.3.10]

3.3.14 Risk Assessment.

The evaluation of the relative danger of sUAS operations when taking into consideration mission objectives and goals, sUAS, professional qualifications of the RPIC and visual observer, operational readiness of the crew, weather conditions, environmental conditions, ~~and~~ regulatory requirements, potential hazards, and operating conditions . (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 13:15:04 EST 2017

Committee Statement

Committee Statement: The committee acknowledges potential hazards and operating conditions are important factors in completing a risk assessment for sUAS operations. The ASTM risk assessment standard has not been included as the committee has not had the opportunity to review it in full.

Staff Note: This change relates to FR-7/FR-8 and changes to the same risk assessment definition found in Chapter 4 and 5.

Response Message:

Public Input No. 21-NFPA 2400-2017 [Section No. 3.3.10]

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 39-NFPA 2400-2017 [New Section after 4.1.4.1]

4.1.4.2* Digital Media Evidence (DME).

The digital recording of images, sounds, and associated data with probative value stored or transmitted in binary form.

A.4.1.4.2 Digital Media Evidence (DME).

The term DME used in this standard refers specifically to data associated with that form of DME.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 22:44:58 EST 2017

Committee Statement

Committee Statement: The committee agrees data retention and management is a very important part of sUAS operations and should have a separate section within Chapter 4. The additional requirements provide guidance on the minimum elements a public safety department should consider when developing data retention policies and procedures.

Staff Note: This change relates to FR-11 and proposed new sections 4.3.4 through 4.3.7.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.

Carlson, Brian

Dibona, Chris

Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 40-NFPA 2400-2017 [New Section after 4.1.4.1]

4.1.4.1 Designated Operations Area (DOA).

The operating area or location defining the volume in the airspace to include altitude in Above Ground Level (AGL) or Mean Sea Level (MSL), and defined geographical operational perimeter for a given public safety mission.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 22:52:36 EST 2017

Committee Statement

Committee Statement: This definition was added as a necessary term in relation to the new requirements for multiple sUAS operations.

Staff Note: This change relates to FR-16 and additional requirements proposed for Multiple Aircraft Operations in Chapter 4.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
20 Affirmative All
2 Affirmative with Comments
1 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

I agree with Michael Baltrotsky... Recommend changing the term Designated Operations Area to just OPERATIONS AREA. The acronym used "DOA" is a common term used in public safety for "Dead on Arrival" and could confuse personnel hearing this over LMR or other systems if the acronym is used.

Negative with Comment

Dershowitz, Adam

This sentences doesn't make sense. AGL and MSL are not a unit that something can be "in". I suggest, "The volume defined by a geographical boundary and altitudes (MSL or AGL) where operations will occur.

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 41-NFPA 2400-2017 [New Section after 4.1.4.3]

4.1.4.6 Remote Pilot in Command (RPIC).

The person who has been found by the public safety entity to be properly qualified to exercise the privileges of remote pilot and has the final authority and responsibility for the operation and safety of sUAS operation as determined by the AHJ. (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 21 07:34:58 EST 2017

Committee Statement

Committee Statement: Staff Note: This is an editorial revision for committee consideration. RPIC has been added to Chapter 4 based on FR-15 & FR-16, therefore the definition must appear in the Chapter 4 definitions section in order for the standard to remain in a consistent format and layout.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
20 Affirmative All
3 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

Recommend changing the term Designated Operations Area to just OPERATIONS AREA. The acronym used "DOA" is a common term used in public safety for "Dead on Arrival" and could confuse personnel hearing this over LMR or other systems if the acronym is used.

Dershowitz, Adam

This should be switched around to emphasize the responsibility: The person who has the final authority and responsibility for the operation and safety of sUAS operation as determined by the AHJ, and who has been found by the public safety entitle to be properly qualified to exercise the privileges of remote pilot.

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 42-NFPA 2400-2017 [New Section after 4.1.4.9]

4.1.4.14 Visual Observer.

A person who assists the RPIC and the person manipulating the flight controls of the small UAS (if that person is not the RPIC) to see and avoid other air traffic or objects aloft or on the ground. [14 CFR Part 107, 2016] (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 21 08:10:02 EST 2017

Committee Statement

Committee Statement: This is an editorial revision for committee consideration. Visual Observer has been added to Chapter 4 based on FR-16, therefore the definition must appear in the Chapter 4 definitions section in order for the standard to remain in a consistent format and layout.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 7-NFPA 2400-2017 [New Section after 4.1.4.9]

4.1.4.7 Risk Assessment.

The evaluation of the relative danger of sUAS operations when taking into consideration mission objectives and goals, sUAS, professional qualifications of the RPIC and visual observer, operational readiness of the crew, weather conditions, environmental conditions, regulatory requirements, potential hazards, and operating conditions. (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 13:40:23 EST 2017

Committee Statement

Committee Statement: The definition is used in Chapter 4 and as a result, it is repeated here with edits from the applicable Public Input incorporated.

Staff Note: This change relates to FR-5/FR-8 and changes to the same risk assessment definition found in Chapter 3 and 5.

Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

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Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 9-NFPA 2400-2017 [Section No. 4.3.2]

4.3.2

Prior to implementing an sUAS programs , public safety entities shall adopt policies and procedures that include address the following information :

(1) Administrative Overall program management

(2) Operational procedures

(3) Personnel qualifications and , training, and certifications

(4) Safety

(5) Maintenance Care and maintenance of the aircraft, systems, and equipment

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 13:56:43 EST 2017

Committee Statement

Committee Statement: The committee added extra detail in relation to program management, certification and care/maintenance. The intent of this section is to identify the main elements a public safety entity needs to consider for their policies and procedures, not to prescribe what is in those policies and procedures. That content will be influenced by their sUAS, sUAS operations and the department's role with sUAS based on its jurisdiction.

Response Message:

Public Input No. 40-NFPA 2400-2017 [Global Input]

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.

Carlson, Brian

Dibona, Chris

Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

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Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 11-NFPA 2400-2017 [New Section after 4.3.3]

4.3.4

Public safety entities shall establish a policy that addresses data captured by the sUAS.

4.3.5

Public safety entities shall handle data collected by the sUAS for evidentiary purposes in accordance with the regulatory requirements as determined by the AHJ and policies governing DME.

4.3.6

Public safety entities shall handle data collected by the sUAS not of evidentiary value in accordance with the regulatory requirements as determined by AHJ.

4.3.7

Public safety entities shall have a policy that restricts data collection to what is necessary to accomplish the sUAS operation.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 14:53:38 EST 2017

Committee Statement

Committee Statement: The committee agrees data retention and management is a very important part of sUAS operations and should have separate sections within Chapter 4. The additional requirements provide guidance on the minimum elements a public safety department should consider when developing data retention policies and procedures.

Staff Note: This change relates to FR-10 and proposed new definition in Chapter 3 Definitions.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.

Carlson, Brian

Dibona, Chris

Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 12-NFPA 2400-2017 [Section No. 4.5]

4.5 sUAS Selection — Needs of the Public Safety Entity.

4.5.1

A purchase specification for the sUAS shall be completed by the public safety entity prior to commencing the acquisition process.

4.5.2

The purchase specifications shall be based on the specific uses and applications as determined by the operational needs assessment.

4.5.3*

Any purchase specification shall ~~include~~ consider the following ~~based on identified mission objectives~~ :

~~Specific uses and applications as determined by the operational needs assessment~~

(1) Operational requirements

(2) ~~System~~ Minimum system configuration and specifications

(3) Quantitative data demonstrating sUAS capabilities

(4) Sustainable life cycle

~~4.5.4~~

~~The public safety entity shall evaluate if the sUAS has a sustainable life cycle prior to purchase.~~

Supplemental Information

File Name	Description	Approved
FR_12_Section_4.5.1.docx	Revised section. FOR STAFF USE ONLY	

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 15:33:43 EST 2017

Committee Statement

Committee Statement: The committee reworded this section for clarity and included sustainable life cycle as it is an important aspect to consider in relation to the needs of the public safety entity.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin
Norton, Adam
O'Shea, Michael
Reyes, Eddie
Schecter, Peter M.

Affirmative All

Brauer, Brian R.
Chu, Kai-Dee
Cordobes, Robby
Dershowitz, Adam
Goodbar, Darren
Hill, Robert W.
Hough, George C.
Hudgins, John
Jacoff, Adam
Kidd, James Allan
Kimmel, Kevin
Martel, David
Mocerino, Michael A.
Peterson, Ryan
Ryder, Noah
Sadler, Christopher Wayne
Shinnamon, Sr., Donald
Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 45-NFPA 2400-2018 [Sections 4.6.1, 4.6.2, 4.6.3, 4.6.4, 4.6.5, 4.6.6]

4.6.1 General Operations.

4.6.1.1

The RPIC of sUAS shall be directly responsible for, and is the final authority on, the operation of that aircraft.

4.6.1.2

sUAS operations shall only be conducted following a risk assessment that is performed by the RPIC.

4.6.1.3*

The risk assessment shall address the operational risks severity and the operational risks probability.

A.4.6.1.3

In the United States, the FAA provides risk assessment tools which can be found in the Advisory Circular 107-2. This guidance will change based on the country you are operating from and what applicable guidance your national aviation authority uses.

4.6.1.4

Prior to sUAS operations, the RPIC shall develop mitigations to reduce the risks identified.

4.6.1.5

The RPIC shall verify mitigations do not create new hazards to the operation.

4.6.1.6*

sUAS operations shall comply with all regulatory requirements as determined by the AHJ based on their type of operation.

A.4.6.1.6

In addition to regulatory requirements as determined by the applicable national aviation authority, there can exist additional regulations at an operational level. These can also vary based on the type of public safety entity and the type of sUAS operations provided. For example, a fire department operating sUAS for responding to incidents can be subject to different regulatory requirements than a law enforcement agency operating sUAS for reconnaissance, even if operating in the same location.

4.6.1.7

sUAS operations shall only be conducted for authorized missions in accordance with the public safety entities policies and procedures.

4.6.1.8

sUAS operations shall be incorporated within ICS, when established.

4.6.1.9

sUAS operations shall be performed by individuals meeting the requirements of Chapter 5.

4.6.1.10

Deployment of sUAS operations shall include the establishment of take-off, landing, and drop zones to allow for safe operations.

Detail FR-44

4.6.1.11*

Contaminated sUAS shall be decontaminated in accordance with the policies and procedures established by the public safety entity.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 08 14:12:29 EST 2018

Committee Statement

Committee Statement: The RPIC needs to complete a risk assessment in order to identify and make an informed decision about the hazards associated with the sUAS operation. At a minimum, they need to consider operational risk severity and the operational risk probability, develop mitigation to reduce the identified risks, and verify mitigations do not create new hazards to the operations. National was added to the annex to describe the applicable aviation authority from the international perspective.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
20 Affirmative All
3 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin
Norton, Adam
O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Dershowitz, Adam

I suggest: 4.6.1.3: "The risk assessment shall include the operational risk (not risks) severity and probability." 4.6.1.4 Mitigations may not be necessary! I suggest: "If the risk assessment is not acceptable then mitigations shall be developed" 4.6.1.5 "The RPIC shall review and mitigation and if they create any new hazards additional risk assessments must be completed for these new hazards"

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 16-NFPA 2400-2017 [New Section after 4.6.6]

4.6.2 Multiple Aircraft Operations.

4.6.2.1

A UAS Coordinator shall oversee multiple RPICs during active multiple aircraft operations.

4.6.2.2

The public safety entity shall conduct and document multiple sUAS training at a specific training site that will remain well clear of housing areas, roads, people, and watercraft.

4.6.2.3

Each aircraft and ground control station (GCS) shall have visible markings to individually identify the aircraft as a means to distinguish aircraft and GCS among others at the incident scene.

4.6.2.4

Lights of an individual color shall be used to identify the individual aircraft being controlled by the RPIC's and observed by the visual observer.

4.6.2.5

Lights of an individual color used for day or night operations, shall be designed to be visible from a distance of no less than 3 statute miles (4.8 km) at night.

4.6.2.6

A separate RPIC and visual observer shall be used for each aircraft operating in the DOA.

4.6.2.7

A protocol shall be established to minimize the risk of an in-flight conflict between multiple aircrafts during all of the following:

(1) launch

(2) flight and recovery

(3) lost communication link event

(4) loss of GPS signal

4.6.2.8

The UAS Coordinator shall conduct a pre-mission briefing with all RPICs and visual observers.

4.6.2.9

The pre-mission briefing shall include the following:

(1) Airspace authorization

(2) Altitudes to be flown

(3) Mission overview, including handoff procedures

(4) Frequencies to be used

(5) Flight time, including reserve fuel or battery requirements

(6) Contingency procedures, including lost link, divert, and flight termination

(7) Hazards unique to the flight being flown

(8) Protocol to prevent in-flight conflict

Submitter Information Verification

Submitter Full Name: Michael Wixted

Organization: National Fire Protection Assoc

Street Address:

City:

State:

Zip:

Submittal Date: Sun Nov 19 11:42:56 EST 2017

Committee Statement

Committee Statement: These requirements were added to address multiple sUAS operations. When a public safety entity has more than one sUAS in flight there are certain safety parameters that need to be considered. The revisions provide guidance on what needs to be considered when developing a safety case for multiple sUAS operations in order to help the public safety entity mitigate the increased risks.

Staff Note: This change relates to FR-17 and the definition added Designated Operations Area in Chapter 3.

Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin
Norton, Adam
O'Shea, Michael
Reyes, Eddie
Schecter, Peter M.

Affirmative All

Brauer, Brian R.
Chu, Kai-Dee
Cordobes, Robby
Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 18-NFPA 2400-2017 [New Section after 4.7.4.2]

4.7.4.3*

Public safety entities shall comply with patient privacy regulations as relating to the data captured during sUAS operations.

A.4.7.4.3

In the United States, the applicable patient privacy regulations are referred to as the Health Insurance Portability and Accountability Act (HIPAA) of 1996. It provides data privacy and security provisions for safeguarding medical information. This will change based on the country you are operating from and what the applicable patient privacy regulations are.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 12:16:45 EST 2017

Committee Statement

Committee Statement: If you are providing medical services you will need to comply with the applicable patient privacy regulations. The committee has highlighted this and provided an example of the applicable legislation in the United States.

Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris

Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

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Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 19-NFPA 2400-2017 [Section No. 4.7.5.2]

4.7.5.2

Law enforcement agencies shall have written policies ~~in place~~ that strictly comply with existing laws and statutes to ensure sUAS operations are conducted in a lawful manner.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 12:24:49 EST 2017

Committee Statement

Committee Statement: This was an editorial revision, the term "in-place" is redundant in the requirement.
Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin
Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 20-NFPA 2400-2017 [Section No. 5.1.2.8]

5.1.2.8

sUAS shall be operated ~~in accordance with~~ within the design ~~criteria~~ limitations and manufacturer's specifications.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 13:03:12 EST 2017

Committee Statement

Committee Statement: Limitations is a more accepted industry term and more in line with the thresholds the public safety entity should not exceed. Manufacturer specifications is retained because manufacturers specifications is the information that will most likely be provided to the public safety entity when the design criteria may not be known or accessible. Having SOPs to exceed either of these puts the public safety entity at risk.

Response Message:

Public Input No. 40-NFPA 2400-2017 [Global Input]

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 21-NFPA 2400-2017 [Section No. 5.1.3.2.2]

5.1.3.2.2

The ~~AHJ~~ public safety entity shall establish instructional priority and training program content to prepare personnel to meet the JPRs of this standard.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 19:00:19 EST 2017

Committee Statement

Committee Statement: It is the responsibility of the public safety entity to establish instructional priority and training program content for their personnel. The training has to be to the applicable regulations as determined by the AHJ.

Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 22-NFPA 2400-2017 [Section No. 5.1.3.6]

5.1.3.6

The ~~AHJ~~ public safety entity shall ~~provide~~ ensure the ~~necessary~~ applicable equipment, personal protective equipment (PPE), force protection, and clothing are utilized to safely conduct ~~assignments~~ operations .

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 19:05:22 EST 2017

Committee Statement

Committee Statement: The committee agrees that the responsibility for ensuring the necessary safety equipment is utilized rests with the public safety entity. However, it is not necessarily the public safety entities responsibility to provide all equipment i.e. a contractor working for a public safety entity will provide their own PPE.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 29-NFPA 2400-2017 [New Section after 5.1.4.3]

5.1.4.4 Positive Aircraft Control.

Consistently maintaining appropriate control of the aircraft, regardless of the phase of flight or potential distraction of other required tasks. (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 20:53:29 EST 2017

Committee Statement

Committee Statement: The definition was added as a result of changes to the aerial maneuvers JPR. The committee looked at adding more skillsets to the maneuvering JPR. However, this technology is still relatively knew in the public safety arena and as a result it was decided to keep the maneuvering JPR at a high level to allow greater industry use. Instead an annex identifying existing test methods under development by NIST was added to provide some sample means to test RPIC proficiency.

Staff Note: This change relates to FR-27 and changes to requirements proposed for perform aerial maneuvers in Chapter 5.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 6-NFPA 2400-2017 [Section No. 5.1.4.5]

5.1.4.6* Remote Pilot in Command (RPIC).

The person ~~that~~ who has been found by the public safety entity to be properly qualified to exercise the privileges of remote pilot and has the final authority and responsibility for the operation and safety of sUAS operation as determined by the authority having jurisdiction (AHJ). (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 13:30:22 EST 2017

Committee Statement

Committee Statement: The committee wants to emphasize that it's up to public safety entity to determine who's qualified from their department.

Staff Note: This change relates to FR-4 and changes to the same RPIC definition found in Chapter 3 Definitions.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

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Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 8-NFPA 2400-2017 [Section No. 5.1.4.7]

5.1.4.8 Risk Assessment.

The evaluation of the relative danger of sUAS operations when taking into consideration mission objectives and goals, sUAS, professional qualifications of the RPIC and visual observer, operational readiness of the crew, weather conditions, environmental conditions, ~~and~~ regulatory requirements, potential hazards, and operating conditions . (PQU)

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 15 13:47:01 EST 2017

Committee Statement

Committee Statement: The committee acknowledges potential hazards and operating conditions are important factors in completing a risk assessment for sUAS operations. The ASTM risk assessment standard has not been included as the committee has not had the opportunity to review it in full.

Staff Note: This change relates to FR-5/FR-7 and changes to the same risk assessment definition found in Chapter 3 and 4.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 23-NFPA 2400-2017 [Section No. 5.2.2.3]

~~5.2.2.3~~

~~The RPIC shall conduct pre-flight, flight, in-flight, and post-flight for sUAS operations quarterly.~~

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 19:14:16 EST 2017

Committee Statement

Committee Statement: There is confusion associated with the intent behind this requirement. It was meant to establish a minimum currency, so that RPICs who do not operate a sUAS for an extended period of time are required to at least quarterly demonstrate the duties associated with the JPRs in NFPA 2400 in order to remain current. The committee has also determined that currency should be up to the AHJ.

Response Message:

Public Input No. 6-NFPA 2400-2017 [Section No. 5.3 [Excluding any Sub-Sections]]

Public Input No. 5-NFPA 2400-2017 [Section No. 5.2.2.3]

Public Input No. 38-NFPA 2400-2017 [Section No. 5.2.2.3]

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 24-NFPA 2400-2017 [Sections 5.2.2.4, 5.2.2.5]

~~5.2.2.4~~

~~A risk assessment shall be performed by the RPIC prior to sUAS operations in accordance with their public safety entities polices and procedures.~~

~~5.2.2.5~~

~~The RPIC shall confirm data acquisition, retention, and storage for sUAS operations in accordance with the data policies and procedures of the public safety entity.~~

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 19:22:45 EST 2017

Committee Statement

Committee Statement: The committee deleted redundant requirements due to changes in Chapter 4, see proposed revisions to section 4.6.1 General Operations.
Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 25-NFPA 2400-2017 [New Section after 5.2.3.2]

5.2.3.3

The visual observer shall be trained prior to deployment in pre-flight, flight, and post-flight duties in accordance with the AHJ's operating procedures.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 19:30:52 EST 2017

Committee Statement

Committee Statement: The committee agrees that the Visual Observer, if utilized, is an import aspect of a sUAS operation and the VO needs to be trained prior to being deployed at an incident. Sometimes is it is not possible for that training to take place well in advance of an operation and it is necessary for it to be completed on scene. The annex is no longer necessary due to the section being reworded.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 26-NFPA 2400-2017 [Section No. 5.3 [Excluding any Sub-Sections]]

Duties shall include performing pre-flight, flight~~, in-flight~~ , and post-flight functions for sUAS operations.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 19:34:59 EST 2017

Committee Statement

Committee Statement: The committee agrees the terms flight and in-flight are confusing. These sections can be combined into a single section for duties associated with flight for greater clarity.

Response Message:

Public Input No. 7-NFPA 2400-2017 [Section No. 5.3.2]

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 27-NFPA 2400-2017 [Section No. 5.3.3.2]

5.3.2.3*

Perform aerial maneuvers given an sUAS in flight within a designated airspace under the regulatory requirements as determined by the AHJ, so that the ~~sUAS are maneuvered in a safe manner that avoids obstacles and demonstrates climb out, level off, and cruise functions~~ operator demonstrates positive aircraft control in accordance with the approved operational flight plan.

A.5.3.2.3

The type of sUAS (e.g., fixed wing, untethered quadcopter, or tethered quadcopter) will greatly affect the type of maneuvers the RPIC can perform. Also, the capabilities and limitations of the individual product may influence the maneuvers an RPIC can demonstrate. Any training or curriculum based on the JPR should take these factors into consideration.

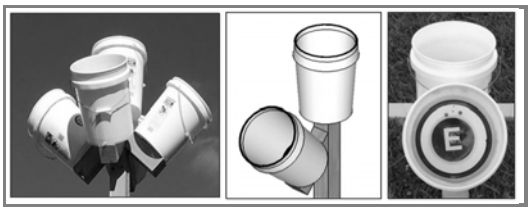
The following test methods developed by the National Institute of Standards and Technology (NIST) can be applied to the JPR to demonstrate RPIC proficiency when performing aerial maneuvers:

(1) *Maintain position and rotate.* This test method evaluates the system capability to maintain position while rotating. The system performs a series of basic maneuvers using an onboard camera to align with four surrounding recessed targets angled inward toward a defined center hover position and altitude. *[See Figure A.5.3.2.3(a) .]*

Figure A.5.3.2.3(a) Maintain Position and Rotate.

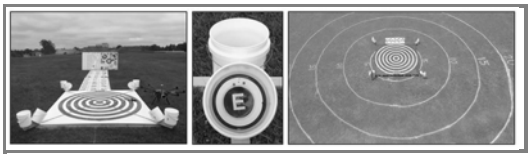
(2) *Orbit a point (move and rotate).* This test method evaluates the system capability to move and rotate around a point. The system performs a series of basic maneuvers using an onboard camera to align with centrally located bucket targets from a defined radius and altitude. Surrounding bucket targets are used to define the intended radius and altitude. This test method can be conducted manually using discrete move and rotate maneuvers or automatically using orbit features of the system. *[See Figure A.5.3.2.3(b) .]*

Figure A.5.3.2.3(b) Orbit a Point (Move and Rotate).



(3) *Land accurately.* This test method evaluates the system capability to land accurately from vertical and downward 45-degree descending approaches. The system performs a series of landings on a metered platform from a defined range, altitude, and four different approach directions. When performing the angled approaches, the recessed targets are used to guide the descent. [*See Figure A.5.3.2.3(c) .]*

Figure A.5.3.2.3(c) Land Accurately.

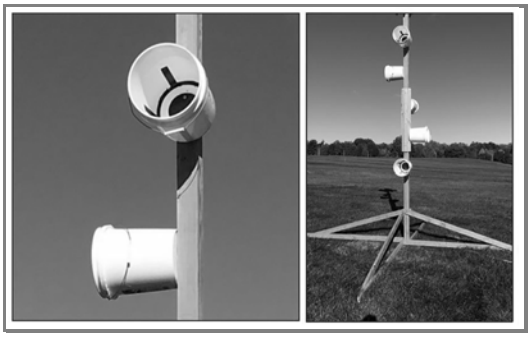


(4) *Avoid obstacles (figure-8s).* This test method evaluates the system capability to maneuver around vertical obstacles (shown as yellow posts) and horizontal obstacles (shown as red bars). The system performs a series of figure-8 paths in various orientations, including nose-forward, nose-left, and nose-right. *[See Figure A.5.3.2.3(d) .]*

Figure A.5.3.2.3(d) Avoid Obstacles (Figure-8s).

(5) *Fly straight and level.* This test method evaluates the capability to fly straight and level using a visual target as a guide. The system performs a series of flights toward such targets either from multiple directions or in a back and forth manner between two targets using the recessed bucket target to assess deviations from the linear trajectory. *[See Figure A.5.3.2.3(e) .]*

Figure A.5.3.2.3(e) Fly Straight and Level.



(A) Requisite Knowledge:

Knowledge of regulatory requirements, capabilities, and operational controls of the specific sUAS.

(B) Requisite Skill:

The ability to operate the specific sUAS, activate different sUAS functions, and maintain control in a safe manner during this phase of flight.

Supplemental Information

File Name	Description	Approved
Maintain_Position_and_Rotate.jpg	Maintain_Position_and_Rotate FOR STAFF USE	
Orbit_a_Point_Move_and_Rotate_.jpg	Orbit_a_Point_Move_and_Rotate FOR STAFF USE	
Avoid_Obstacles_Figure-8s_.jpg	Avoid_Obstacles_Figure-8s FOR STAFF USE	
Fly_Straight_and_Level.jpg	Fly_Straight_and_Level FOR STAFF USE	
Land_Accurately.jpg	Land_Accurately FOR STAFF USE	

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 20:14:13 EST 2017

Committee Statement

Committee Statement: The committee looked at adding more skill-sets to the maneuvering JPR. However, this technology is still relatively knew in the public safety arena and as a result it was decided the keep the maneuvering JPR at a high level to allow greater industry use. Instead an annex identifying existing test methods under development by NIST was added to provide some sample means to test RPIC proficiency.

Staff Note: This change relates to FR-28/29 and changes for a proposed positive aircraft control definition in Chapter 3 and Chapter 5.

Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin
Norton, Adam
O'Shea, Michael
Reyes, Eddie
Schecter, Peter M.

Affirmative All

Brauer, Brian R.
Chu, Kai-Dee
Cordobes, Robby
Dershowitz, Adam
Goodbar, Darren
Hill, Robert W.
Hough, George C.
Hudgins, John
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Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 30-NFPA 2400-2017 [Section No. 5.3.3.3]

5.3.2.4*

Perform payload functionality given an sUAS in flight within a designated airspace under the regulatory requirements as determined by the AHJ, so that the sUAS ~~are~~ is maneuvered in a manner that avoids obstacles and demonstrates payload drop, payload application, or data acquisition at targeted locations in accordance with the mission plan.

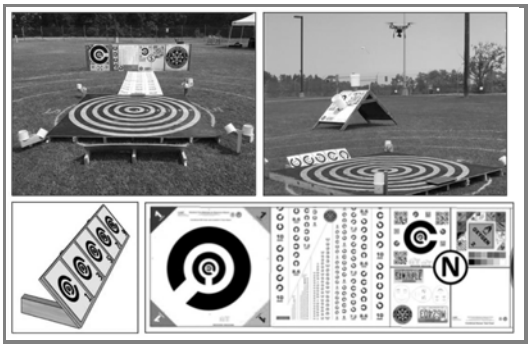
A.5.3.2.4

The type of sUAS (e.g., fixed wing, untethered quadcopter, or tethered quadcopter) will greatly affect the type of payload functions the RPIC can perform. Also, the capabilities and limitations of the individual product may influence the payload functions an RPIC can demonstrate. Any training or curriculum based on the JPR should take these factors into consideration.

The following test methods developed by the NIST can be applied to the JPR to demonstrate RPIC proficiency when performing payload functions:

(1) *Point and zoom cameras.* This test method evaluates the capability to point and zoom cameras at near-field and far-field visual acuity targets from a specified hover position. The system performs a series of target identifications alternating between near-field and far-field visual acuity targets separated by a 180-degree rotation. *[See Figure A.5.3.2.4(a) .]*

Figure A.5.3.2.4(a) Point and Zoom Cameras.

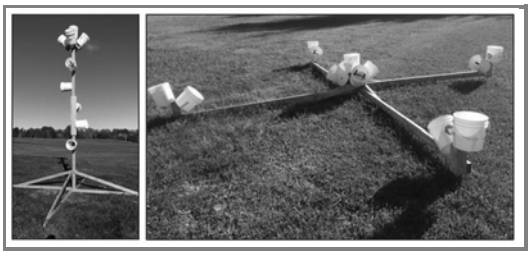


(2) *Identify objects.* This test method evaluates the capability to move and rotate around an object of interest to identify key features. The system performs a series of basic maneuvers using an onboard camera to align with centrally located bucket targets from a defined radius and altitude. Surrounding bucket targets are used to define the intended radius and altitude. This test method can be conducted manually using discrete move and rotate maneuvers or automatically using orbit features of the system. *[See Figure A.5.3.2.4(b) .]*

Figure A.5.3.2.4(b) Identify Objects.

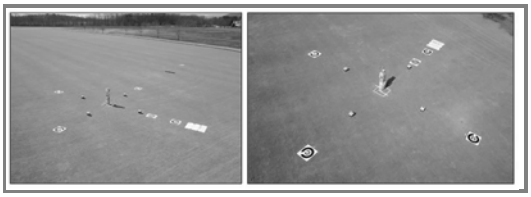
(3) *Inspect objects.* This test method evaluates the capability to move around an object of interest to inspect key details from close proximity. The system performs a series of basic maneuvers using an onboard camera to align with bucket targets to inspect downward, forward, omni-directional, and upward objects. *[See Figure A.5.3.2.4(c) .]*

Figure A.5.3.2.4(c) Inspect Objects.



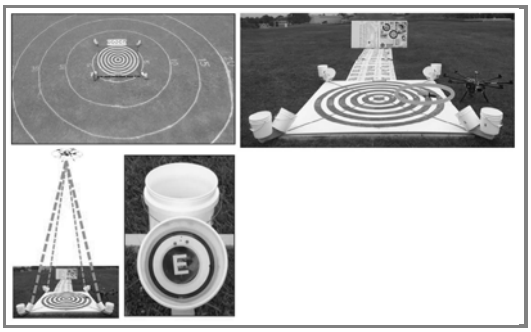
(4) *Map wide areas.* This test method evaluates the capability to localize and map a variety of known and unknown objects across a wide area. The system performs its mapping function from a prescribed altitude intended to force extensive stitching of images. Ground targets are placed at known locations throughout a scenario. The embedded ground objects are made of standard test apparatuses used in other test methods and operationally significant items. *[See Figure A.5.3.2.4(d) .]*

Figure A.5.3.2.4(d) Map Wide Areas.



(5) *Drop accuracy.* This test method evaluates the capability to drop a payload accurately from a defined altitude. The system performs a series of drops on a metered platform from different altitudes. The payloads can be weighted surrogates or operationally significant delivery items. *[See Figure A.5.3.2.4(e) .]*

Figure A.5.3.2.4(e) Drop Accuracy.



(A) Requisite Knowledge:

Knowledge of mission plan, ~~contents and~~ objectives, regulatory requirements, capabilities, operation of payload functions, and operational controls of the specific sUAS.

(B) Requisite Skill:

The ability to operate the specific sUAS, activate different payload functions, and maintain control in a safe manner during this phase of flight.

Supplemental Information

File Name	Description	Approved
Point_and_Zoom_Cameras.jpg	Point_and_Zoom_Cameras FOR STAFF USE	
Identify_Objects.jpg	Identify_Objects FOR STAFF USE	
Inspect_Objects.jpg	Inspect_Objects FOR STAFF USE	
Map_Wide_Areas.jpg	Map_Wide_Areas FOR STAFF USE	
Drop_Accuracy.jpg	Drop_Accuracy FOR STAFF USE	

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 21:01:44 EST 2017

Committee Statement

Committee Statement: Given the regulations the RPIC is operating under, there may be greater variances in how a RPIC can demonstrate the JPR i.e. operating under Part 107, a COA, or in restricted airspace. Hence the "designated airspace under the regulatory requirements as determined by the AHJ" is not redundant to this section. The committee agrees that payload application may vary from payload drop and that is an enhancement to the JPR. Contents has been removed as it is vague and not necessary. Also, an Annex identifying existing test methods under development by NIST was added to provide some sample means to test RPIC proficiency. Changes relating to format cannot be made as they are not in compliance with the JPR format required for all NFPA professional qualification standards.

Response Message:

Public Input No. 41-NFPA 2400-2017 [Section No. 5.3.3.3(A)]

Public Input No. 10-NFPA 2400-2017 [Section No. 5.3.3.3 [Excluding any Sub-Sections]]

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin
Norton, Adam
O'Shea, Michael
Reyes, Eddie
Schecter, Peter M.

Affirmative All

Brauer, Brian R.
Chu, Kai-Dee
Cordobes, Robby
Dershowitz, Adam
Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 31-NFPA 2400-2017 [Section No. 5.4.2]

5.4.2 ~~In-Flight~~ Flight .

5.4.2.1

Maintain visual line of sight of the sUAS given an RPIC and an sUAS in flight along a designated flight path under the regulatory requirements as determined by the AHJ, so that obstacles are identified and communicated to the RPIC prior to a potential collision and in a time that allows for corrective action.

(A) Requisite Knowledge:

Knowledge of regulatory requirements and operational and flight capabilities of the specific sUAS.

(B) Requisite Skill:

The ability to communicate verbally to the RPIC.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 19 21:13:42 EST 2017

Committee Statement

Committee Statement: The committee agrees the terms flight and in-flight are confusing. These sections can be combined into a single section for duties associated with flight for greater clarity.

Staff Note: This change relates to FR-26 and changes to the same classification of duties for RPICs.

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.

Carlson, Brian

Dibona, Chris

Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 32-NFPA 2400-2017 [Chapter 6]

Chapter 6 Maintenance of sUAS

6.1 Administration.

6.1.1 Scope.

This chapter shall identify minimum requirements for the maintenance of sUAS when used for ~~operations supporting~~ public safety ~~entities~~ operations . (See 1.6.3 .)

6.1.2 Purpose.

The chapter shall establish procedures as part of a program to provide maintenance for sUAS when used by public safety entities in order to reduce risks associated with poorly maintained, contaminated, or damaged sUAS and ensure airworthiness.

6.1.3 Application.

The chapter shall apply to new and existing sUAS used by public safety entities.

6.1.4 Definitions.

6.1.4.1 Maintenance Program.

A maintenance program is a system or set of procedures for the continuous maintenance of ~~specific~~ the sUAS in order to ensure ~~optimal condition for continuous usage by the public safety entity~~ airworthiness .

6.2 General Requirements.

6.2.1

Public safety entities that utilize sUAS ~~for public safety~~ shall establish a maintenance program in accordance with ~~Section~~ ~~6.3~~ this chapter .

6.2.2

The maintenance program shall be documented and address all components of the system, maintenance personnel, and training.

6.2.3

The program shall comply with the system manufacturer's recommendations if provided, or the public safety entity shall develop its own program.

6.2.4

Maintenance programs shall include scheduled and unscheduled maintenance requirements.

6.2.5

As part of the maintenance program, the public safety entity shall ~~identify routine service to be performed on the sUAS based on~~ have procedures for service for the following:

(1) ~~Cleaning~~ Routine cleaning

(2) ~~Disinfecting or decontamination~~ Decontamination

(3) ~~Operational~~ Maintenance necessary due to operational applications

(4) ~~Operating~~ Maintenance necessary due to operating environment

(5) Storage requirements

6.2.6

Maintenance programs shall ~~include~~ identify the following ~~information~~ :

(1) List of personnel authorized to perform each type of maintenance

(2) Necessary qualifications of personnel authorized to perform maintenance

(3) Maintenance only performed by the manufacturer

6.2.7 Discrepancy Reporting.

6.2.7.1

Maintenance programs shall have a documented discrepancy reporting procedure for unscheduled maintenance.

6.2.7.2

Discrepancy reporting shall include procedures for ~~unscheduled maintenance shall include procedures for removing the sUAS from service~~ removing the sUAS from service, including procedures for identifying those systems determined to be out of service .

6.2.8

Maintenance programs shall require post-maintenance systems checks appropriate to the level of maintenance performed, including firmware and software updates, prior to returning the sUAS to service.

6.2.9

Maintenance programs shall have a documented battery storage ~~and~~ , charging, disposal, and emergency procedures policy in accordance with the manufacturer's recommendations or agency instructions.

6.2.10

Maintenance programs shall have a documented parts storage policy in accordance with the manufacturer's instructions.

6.2.11 Recordkeeping.

6.2.11.1

Maintenance programs shall require documentation of all maintenance activities in a logbook ~~in accordance with the AHJ~~ .

6.2.11.2

Unless in conflict with any retention policies or laws as determined by the AHJ, maintenance records shall be retained by the public safety department for the life of the sUAS.

~~**6.3** Maintenance Program~~

~~**6.3.2**~~

~~Maintenance programs shall include scheduled maintenance requirements.~~

~~**6.3.4**~~

~~The public safety department shall clean, disinfect, and store sUAS in accordance with the manufacturer's instructions.~~

~~**6.3.5**~~

~~In the absence of routine service instructions supplied by the sUAS manufacturer, the public safety entity shall develop its own routine service procedures.~~

~~**6.3.1**~~

~~Maintenance programs shall document all maintenance activities in a logbook in accordance with the AHJ.~~

~~**6.3.1**~~

~~Unless in conflict with any retention policies or laws as determined by the AHJ, maintenance records shall be retained by the public safety department for the life of the sUAS.~~

~~**6.3.4**~~

~~Maintenance programs shall have a discrepancy reporting procedure for unscheduled maintenance.~~

~~**6.3.5**~~

~~Discrepancy reporting procedures for unscheduled maintenance shall include procedures for removing the sUAS from service.~~

~~**6.3.6**~~

~~Maintenance programs shall require post-maintenance systems checks appropriate to the level of maintenance performed prior to returning the sUAS to service.~~

~~**6.3.7**~~

~~Maintenance programs shall have a documented battery storage and charging policy in accordance with the manufacturer's instructions.~~

~~**6.3.8**~~

~~Maintenance programs shall have a documented parts storage policy in accordance with the manufacturer's instructions.~~

Supplemental Information

File Name	Description	Approved
FR_32_Chapter_6.docx	New Chapter 6. FOR STAFF USE	

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 07:35:04 EST 2017

Committee Statement

Committee Statement: This section was rewritten for clarity and consistency based on the Public Inputs received. There were several instances where submitters suggested changing "should" to "shall". This is an NFPA standard and must be written with a "shall" statement per the NFPA MOS. If the submitter believes a requirement is too onerous, they should return with Public Comments suggesting annex items to replace the existing requirements. Note annex items must be linked to a parent section and requirement as they are explanatory to the requirement. The additional topics were addressed in the rewrite are as follows:

• It was suggested maintenance records be kept beyond the life cycle of the sUAS. The standard is a series of minimum requirements. As a result, nothing prohibits the agency from keeping the records beyond the sUAS life cycle and this would be too onerous a minimum requirement for those who do not wish to do so.

• Charging, disposal and emergency procedures were included as part of the documented maintenance program. Many sUAS utilize lithium-ion batteries which can present a potential hazard that can be mitigated through proper storage, charging and disposal. Also, should a thermal runaway occur, emergency procedures can help negate the severity of any incident and allow for faster recovery.

• Firmware was added to post-maintenance systems checks to address concerns with any potential updates rendering the sUAS in operable due to method, location or time of download.

• It was suggested adding maintenance guidance for “the loss of a communications link” and “emergency procedures”. However, there is already guidance in A.4.5.2 in relation to both these concepts. It is also a more appropriate section as these elements need to be considered when the public safety department is specifying and procuring a sUAS.

• Manufacturer certified maintenance was removed as it may not be available and there may be other technical expertise that could perform required maintenance and/or repairs.

Staff Note: Requirements were proposed to accompany the definition of Maintenance Program in the definition section in Chapter 6. Requirements cannot appear in this section per the NFPA MOS and were moved to the start of section 6.3 General Requirements, no wording was changed.

Response Message:

Public Input No. 39-NFPA 2400-2017 [New Section after 6.3]

Public Input No. 42-NFPA 2400-2017 [Section No. 6.1.2]

Public Input No. 43-NFPA 2400-2017 [Section No. 6.3.13]

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.

Carlson, Brian

Dibona, Chris

Ison, David

Kenney, Matthew

Kessler, Coitt

Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 33-NFPA 2400-2017 [Section No. A.4.5.2]

A.4.5.3

Within the purchase specification there are many additional elements a public safety entity needs to consider. This annex providences further guidance on topics such as life cycle sustainability, the evaluation of system capabilities, minimum system considerations, and data link security.

Public safety departments will need to consider the life cycle sustainability of any sUAS they intend to purchase. The ability of a manufacturer to supply replacement parts, critical maintenance, system updates (firmware/software), upgrades, and other applicable components is essential to ensuring continuous sUAS operations. Manufacturer considerations can include, but are not limited to, the following:

(1) Length of time the manufacturer built or sold sUAS

(2) Mean time between failures

(3) Availability — the mean time (how long one can expect to wait) to repair

(4) Total number of systems delivered

(5) Total number of systems in use by public safety departments

(6) Feedback from existing customers

(7) Recorded performance data

In order to evaluate system capabilities, the public safety entity should consider conducting the following procedure based on the purchase specification:

(1) Define and prioritize a list of mission objectives for the sUAS as determined by the operational needs assessment. An example of a mission objective might be to visually identify an object of interest from a given altitude and distance, then deliver a payload to a target location.

(2) Decompose the envisioned mission objectives into their essential mission capabilities. Following the same examples, the system should have a certain level of visual acuity, and potentially also a level of thermal acuity, from the expected altitude. It should have an expected endurance range and time given the payload weight, plus a number of other essential capabilities and safeguards for such a mission to be successful.

(3) Identify the list of applicable standard test methods (with or without acceptance criteria) representing those essential mission capabilities. Examples of test method categories include safety, maneuvering, sensing, situational awareness, energy, communications, durability, and logistics. Annex D provides a list of potential test methods currently in development that could provide such information.

(4) Review the quantitative capabilities data captured within the test methods for the class of sUAS being considered. If particular systems have not yet been tested, ask the manufacturer to provide the results of such testing.

(5) Assess existing combinations of capabilities for available systems to align with envisioned missions.

(6) Consider the value of these systems by comparing system costs vs. their capabilities relative to the "best-in-class" identified in the quantitative data. It is sometimes easiest for comparison purposes to ask each manufacturer to quote a system and related components adding up to a fixed (arbitrary) cost to directly compare value.

(7) Specify your chosen sUAS capabilities for procurement using all applicable test methods with related acceptance criteria as referenced from the quantitative data.

(8) If possible, perform acceptance testing using selected high priority test methods to ensure the delivered system meets the acceptance criteria.

Public safety entities acquiring sUAS should consider the following minimum system considerations for that purchase. These specifications ensure the system has the ability to perform the identified mission safely and effectively.

(1) The small unmanned aircraft should be capable of autonomously executing emergency procedures without the need for inputs by the RPIC for the following situations:

   (a) Loss of the command and control communications link

   (b) Loss of global positioning system signal

(2) sUAS being considered should have the sensors required to perform the identified missions available to meet the identified mission objectives.

(3) The sUAS should be capable of streaming video live to the incident command post or other locations if that requirement is needed to satisfy the identified mission set.

(4) sUAS should be able to record flight telemetry including the following: date, time, altitude, and GPS coordinates. This recorded information allows the agency to document the location of the aircraft for evidentiary value or complaint investigations.

(5) The sUAS control station (the interface used by the RPIC to control the sUAS) should have the ability to monitor the strength of the command and control communications signal between the control station and air vehicle to present loss of that signal and thus control of the air vehicle.

(6) The sUAS control station should have the capability to monitor battery or fuel load of the air vehicle at the control station. This information will be crucial in order to ensure sufficient power or fuel exists to complete the mission objectives and allow for safe return and recovery.

(7) sUAS should have the ability to monitor altitude above ground level at the ground control station (GSC).

(8) sUAS should have a tamper-proof flight time calculator. The ability to account for all flight time to assure that all flights are approved and documented is essential to assure appropriate use of the system. A tamper-proof system tabulates flight time and allows only authorized personnel to reset that calculator.

(9) sUAS intended for use at night or during civil twilight time should have lighted anticollision lighting visible for at least 3 statute miles (required by 14 CFR Part 107). In addition to anti-collision lighting, the air vehicle can be equipped with standard aircraft position lights and painted in high-visibility colors to aid in maintaining visual sight of the air vehicle.

(10) The manufacturer should be able to provide the following based on the specific sUAS purchased by the public safety department:

  (a) System operating manual

  (b) Maintenance manual or maintenance procedures

(11) The manufacturer should provide the following standardized programs for any sUAS purchased by the public safety department:

  (a) Training program for RPICs

  (b) System maintenance program

(12) The manufacturer should provide the following standardized checklists based on the specific sUAS purchased by the public safety department:

  (a) Pre-flight

  (b) Launch

  (c) Pre-landing

  (d) Recovery/landing

  (e) Post-flight

Note that the U.S. National Institute of Justice publication, *"Considerations and Recommendations for Implementing an Unmanned Aircraft Systems (UAS) Program,"* also lists additional recommendations for public safety sUAS specifications.

Public safety entities should consider the need for data link security in relation to the sUAS they intend to purchase. All unmanned aircraft systems use wireless communications links to control the aircraft and to downlink data from its airborne sensors. Many sUAS use minimal, if any, encryption to protect those signals from being compromised. Should this happen, the command and control signal is blocked and either someone else can take control of the aircraft or the aircraft will "fly away" uncontrolled. For data being downlinked, it could allow others to view the data being collected. Many systems use "open source" autopilots, essentially a commercially available autopilot that can be obtained by literally anyone. By definition, any system using an open source autopilot is compromised from a security perspective as it can be obtained and used by anyone to control any system using the same autopilot.

Using multiple levels of security provides the highest level of protection. This is accomplished by manufacturers not using open source components. Next, digital data links can be secured with Advanced

Encryption Standard (AES), 256-bit encryption. AES encryption is a specification for the encryption of electronic data established by the U.S. National Institute for Standards and Technology (NIST). AES is the standard for the U.S. federal government and is the only publicly accessible cipher approved by the National Security Agency for top-secret information.

The sUAS being acquired by the public safety entity should have an appropriate level of security, commensurate with the mission, to protect the wireless communications links used to control the aircraft and to downlink data from its airborne sensors.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 08:04:37 EST 2017

Committee Statement

Committee Statement: Editorial change due do Annex C being moved to Annex D.
Response Message:

Ballot Results

This item has passed ballot

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike
Murphy, Robin
Norton, Adam
O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 34-NFPA 2400-2017 [Section No. A.5.1.4.5]

A.5.1.4.6 Remote Pilot In Command (RPIC).

Remote pilot certification can be achieved through certification of the national governing authority — that is, FAA 14 CFR Part 107, or ~~FAA — Certificates of Waiver or Authorization (COA), or~~ Remote Pilot Aircraft System (RPAS) Certificate (International).

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 08:07:25 EST 2017

Committee Statement

Committee Statement: COA's are self-certified and therefore it is incorrect to list COAs as a remote pilot certification.
Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael
Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 37-NFPA 2400-2017 [New Section after D.1.2.1]

E.1.2.2 U.S. Government Publications.

U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 45, Code of Federal Regulations, "Health Insurance Portability and Accountability Act (HIPAA)," 2016.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Mon Nov 20 08:55:40 EST 2017

Committee Statement

Committee Statement: This is an added reference as a result of changes proposed for section 4.7.4.3 and the addition of a Annex referring to the Health Insurance Portability and Accountability Act (HIPAA) of 1996.
Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael
Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

Dershowitz, Adam

Goodbar, Darren

Hill, Robert W.

Hough, George C.

Hudgins, John

Jacoff, Adam

Kidd, James Allan

Kimmel, Kevin

Martel, David

Mocerino, Michael A.

Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None

First Revision No. 36-NFPA 2400-2017 [Section No. D.1.2.2]

E.1.2.3 FAA Publications.

Federal Aviation Administration, Office of Airport Safety and Standards (AAS), 800 Independence Avenue SW, Washington DC 20591.

Advisory Circular 107-2, "Small Umanned Aircraft Systems," 2016.

Title 14, Code of Federal Regulations, Part 107, "~~Operation, and Certification of~~ Small Unmanned Aircraft Systems," 2016.

Submitter Information Verification

Submitter Full Name: Michael Wixted
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 20 08:43:18 EST 2017

Committee Statement

Committee Statement: Updating to the correct reference and adding advisory circular 107-2,

Response Message:

Ballot Results

✔ **This item has passed ballot**

39 Eligible Voters
14 Not Returned
21 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
2 Abstention

Not Returned

Butters, Timothy P.
Carlson, Brian
Dibona, Chris
Ison, David
Kenney, Matthew
Kessler, Coitt
Looney, John Michael

Lusk, Richard Michael

Miles, Mike

Murphy, Robin

Norton, Adam

O'Shea, Michael

Reyes, Eddie

Schecter, Peter M.

Affirmative All

Brauer, Brian R.

Chu, Kai-Dee

Cordobes, Robby

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Goodbar, Darren

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Hough, George C.

Hudgins, John

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Kidd, James Allan

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Peterson, Ryan

Ryder, Noah

Sadler, Christopher Wayne

Shinnamon, Sr., Donald

Sloane, Matt

Stockwell, Walter

Westwood, Kevin D.

Wiedman, Doug

Affirmative with Comment

Baltrotsky, Michael

No Comment

Nestor, Matt

No Comment...

Abstention

Henderson, Tim

I have not participated in the creation of this document to date, therefore I must abstain.

Schwarzbach, Daniel

None