
FORT WALTON BEACH, FL
NFCS
National Fire Control Symposium
15 – 18 APRIL 2024
FIRE CONTROL SOLUTIONS FOR INTEGRATED DETERRENCE
Call for Abstracts
Abstracts Due: 30 October 2023

Approved for Public Release/Unlimited Distribution;
Case File Number: 88ABW-2020-1286; 29 April 2020

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https://www.usasymposium.com/nfcs/cfa.php

YOU ARE INVITED!

We invite you to participate in the 30th National Fire Control Symposium (NFCS) which will take place in Fort Walton Beach, FL, 15 - 18 April 2024. The NFCS, heralded as the premiere forum for discussing the entire kill web, has served the Integrated Fire Control Community of Interest (IFC-COI) for nearly three decades. Due to its restricted and no-foreign format, the NFCS is in a unique position to cultivate lasting relationships between the forward operators, service communities, warfare centers, laboratories, and our industry partners.

Initially launched in 1992 by the Air Force, and subsequently supported by the Army, Navy, and Marines, the NFCS is now an industry sponsored event. The 2024 event features the U.S. Air Force as the lead technical advisor. The event has been successful in engaging the multi-services, industry, and academia in synergistic relationships and discussions. With continued emphasis on budgets, the government has an increasing reliance on cooperative research efforts. The size and focus of the NFCS promotes a greater number of productive contacts and collaborative relationships, provides an overview of a larger number of external research efforts, and provides U.S. researchers with a deeper understanding of the state-of-the-art and the warfighter's perspective. The net result is the potential reduction in duplication of work completed by academia, industry, and the services, as well as the promotion of scientific advancements resulting from joint efforts that could save the DoD valuable time and financial resources, while defining innovative solutions to technology challenges.

Along with concurrent technical sessions offered throughout the week, attendees can attend a flag level Plenary Session, special topic presentations, a technical poster session, and many networking and collaboration functions. The topics chosen will support the 2024 theme "***Fire Control Solutions for Integrated Deterrence,***" which is critical to ensuring U.S. advantage over peer adversaries.

Topic areas in the 2024 Call for Abstracts are focused on Kill Web elements versus specific functional areas as in the past. All abstracts must fit in one or more of these. Descriptions can be found on the next pages.

We encourage you to engage in this event and look forward to seeing you in Fort Walton Beach in April 2024!

Nominations for the David M. Altwegg Lifetime Achievement Award

We are currently accepting nominations for the David M. Altwegg Lifetime Achievement Award. This award recognizes and honors an individual from Government, Industry, or Academia, who has made significant contributions to the Fire Control community, thus strengthening national defense and benefiting the warfighter over a period of time greater than 20 years. For more information on this award and to access the submission form, visit https://www.usasymposium.com/nfcs/awardprogram.php.

KEY DATES TO REMEMBER

- **27 October 2023 – David M. Altwegg Lifetime Achievement Award Nominations Due**
- **30 October 2023 – Abstracts & Outlines Due**
- **18 March 2024 – Final Presentations & Posters Due**
- **25 March 2024 – Optional Papers Due for Proceedings**
- **15 - 18 April 2024 – Symposium**

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TECHNICAL TOPICS

KILL WEB ELEMENT 1
PREPARE & CONFIGURE

This kill web element requires that platform and operator have the necessary tools and training to prepare, configure, and employ the platforms' systems to successfully complete the kill web. Successful execution of distributed Integrated Fire Control (IFC) requires preparation to ensure optimization of battlespace, maximization of effect, and appropriate allocation of platform, sensor, and weapon resources. This preparation occurs both pre-mission as a function of training, system optimization, and mission planning at multiple levels, and during active operations as a function of battle management, to include dynamic re-planning. Successful preparation requires accurate modeling and simulation (M&S) representations of red and blue capabilities and limitations, relevant decision aids, understanding of force employment concepts, and thorough knowledge of system functions and constraints in relevant operational environments. Increasing warfighting complexity demands specialized tactical training, improved decision speed, and dynamic resource allocation. This need is central to operations in all services, at all levels of war, and in all domains.

KILL WEB ELEMENT 2
SURVEIL

This kill web element requires that systems have the ability to persistently search a volume that is expected to contain threats, and to collect, integrate, correlate, and disseminate (to include in flight target update) surveillance information (manually or automatically) to other elements of the kill web. Successful execution of distributed IFC requires delivery of precision effects with advanced networking, integrated sensor approaches, and multi-node collaboration/decision support tools. Many challenges exist to enable tasking, collection, processing, exploitation, dissemination, and management of the extensive and diverse set of data sources to rapidly orient to evolving threats. These core capabilities are imperative to provide warfighters with timely, decision quality, and actionable combat data at the tactical edge. This pertains to current and proposed systems and technologies that address these challenges and improve the integration of multi-domain command & control (C2) and intelligence, surveillance, and reconnaissance (ISR) capabilities.

KILL WEB ELEMENT 3
DETECT

This kill web element requires that a system detects targets at sufficient range to support mission objectives, in a manner that enables track initiation. Successful execution of distributed IFC requires accurate, timely, and persistent situational awareness (SA) and the means to effectively communicate SA to assets in theater. Space systems provide indispensable capability in contested environments where these assets may provide the only visibility into denied territory. Global, theater, regional, and area detection must be supported by robust and complimentary multi-sensor (electro-optical, infrared, radio frequency, offboard) capabilities to permit efficient handover of detections for tracking and engagement.

KILL WEB ELEMENT 4
TRACK

This kill web element requires that sensors and systems provide timely information of sufficient quality to engage at ranges relevant to support mission objectives. Successful execution of distributed IFC requires the ability to maintain track integrity, and manage a track picture to support force interoperability and common field of view. Multi-sensor (electro-optical, infrared, radio frequency, offboard) data fusion supports robust and accurate track management while suppressing/mitigating effects of deception and electronic attack. Sensor fusion at the data, feature, and decision levels enable optimal fire control solutions.

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TECHNICAL TOPICS

KILL WEB ELEMENT 5
IDENTIFY

This kill web element requires that the system accurately identify targets at sufficient range to employ weapon(s)/effects in support of mission objectives. Successful execution of distributed IFC requires the development and deployment of a reliable and accurate Combat Identification (CID) capability. CID enables the warfighter to locate and identify critical targets with high precision, permits use of long-range weapons, prevents fratricide, enhances battlefield SA, reduces leakage and waste, and reduces exposure of blue forces to enemy fire. This topic will explore innovative architectural, algorithmic, hardware, software, and system integration solutions, as well as near-term operational lessons learned, the decisions and processes involved in CID, and current/emerging CID requirements for all services. CID addresses all functional elements of cooperative and non-cooperative techniques while suppressing/mitigating effects of deception and electronic attack.

KILL WEB ELEMENT 6
ENGAGE

This kill web element requires successful engagement scheduling and coordination to enable weapon employment. This requires sufficiency of communication between the control platform and supported weapons, as well as timely and accurate execution of post-launch operations such as in-flight target updates that support target defeat and sufficient weapon lethality at combat relevant ranges. Successful execution of distributed IFC requires one or more engagement alternatives that satisfy mission objectives in both benign and degraded environments. IFC performance is directly dependent on a number of factors, from environmental impacts to the performance of platform-specific systems and sub-systems, including hardware and software. This topic can include analysis of the impact of the design and configuration of platforms, sensors, and kinetic and non-kinetic weapons and effectors on fire control system performance. In addition to considering offensive fire control performance, this topic also addresses defensive capabilities that enable the fire control system to perform in highly contested environments.

KILL WEB ELEMENT 7
ASSESS & DEFEND

This kill web element requires accurate and timely assessment that supports re-engagement and concurrent surveillance, detection, and tracking of additional threats. Successful execution of distributed IFC requires timely and accurate battle damage and kill assessment. This permits sensor and weapon resource re-allocation, limits over-expenditure of weapons, and ensures any required re-engagement occurs in a timeline that supports optimal weapon-target pairing for threats of varying range and speed.

OTHER KEY WAYS TO ENGAGE

Sponsor

NFCS is made possible in large part by our industry sponsors. Please consider joining the sponsorship team. Each sponsorship package comes with many great amenities designed to promote your important role in this community. If you'd like more information, please visit https://www.usasymposium.com/nfcs/sponsorship.php or contact Kelli Jameson at kjameson@blue52productions.com.

Exhibit

NFCS has limited space for exhibits and demos. Sign up now to reserve your space for this great networking and marketing opportunity. To reserve a space, visit: https://www.usasymposium.com/nfcs/exhibits.php or contact Chelsea Kubal at ckubal@blue52productions.com.

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ABSTRACT SUBMISSION

Abstract Due Date: 30 October 2023
To submit your abstract, visit https://www.usasymposium.com/nfcs/cfa.php

We look forward to receiving your abstract(s) for the 2024 NFCS. This event is conducted at the SECRET//NOFORN level. Attendance is limited to U.S. citizens with a final SECRET clearance. Final presentations should not be more restrictive than Distribution D and SECRET//NOFORN. This Symposium is not open to the general public.

ABSTRACT & SUBMISSION REQUIREMENT CHECKLIST

- ❑ Abstracts must be unclassified.
- ❑ Abstracts must carry a distribution level of A, C, or D.
  - A = Approved for public release, distribution unlimited
  - C = U.S. Government Agencies and their contractors only
  - D = DoD and U.S. DoD contractors only
- ❑ If appropriate, be sure to have your derivative classifier do a sanity check on your unclassified abstract prior to submitting it.
- ❑ If your abstract contains CUI, please include the proper CUI markings and the CUI indicator block.
- ❑ Submissions more restrictive than Distribution A should be password protected with passwords sent to Sherry Johnson at sjohnson@blue52productions.com. More detailed instructions for password protecting and submitting your abstracts can be found on the submission page online.
- ❑ Abstracts should be relevant to one or more of the elements described on the previous pages.
- ❑ Abstracts should clearly demonstrate relevance to the Symposium theme, "***Fire Control Solutions for Integrated Deterrence***."
- ❑ Abstracts should be no more than 400 words long.
- ❑ Abstracts should include the title of your abstract, a full distribution statement in the body of your submission, and proper CUI markings and control blocks as applicable. These do not count towards your 400 words.
- ❑ Abstracts must contain an unclassified outline containing the key points of your presentation (this does not count against the 400 word count).
- ❑ Abstracts should clearly express: 1) objective, 2) relevance to the proposed kill web elements, 3) scope, and 4) conclusions of your presentation.
- ❑ Abstracts that do not support the theme or at least one of the kill web elements, or do not provide technical (vs. marketing) content, may be rejected.
- ❑ If you find it impossible to submit a worthwhile abstract at the unclassified level, please contact Michelle Williams at mkw@blue52productions.com for potential alternative options.

Note: *Presentations that have content beyond the unclassified level, are clearly associated with the proposed kill web elements, and are relevant to the warfighter needs will have the highest probability of selection.*

NOTIFICATION & PRESENTATION INFORMATION

You will be contacted regarding the status of your acceptance by early December. Abstract titles will be included in the program, therefore they must be cleared for public release. You will have a chance to submit a Distribution A title after notification of selection. Abstracts will be selected for oral presentation, alternate oral presentation, or poster presentation. An alternate oral presentation is a presentation in stand-by mode until an oral presentation slot becomes available, and alternates should also plan to present their material as a poster presentation. Poster presentations are an important facet of the NFCS and provide dedicated one-on-one exchanges between the presenter and the attendees. Oral presentations slots are limited to 20 minutes which includes time for questions and transition to the next speaker. Please note that selection and presentation of an abstract, whether oral or poster, does not waive any applicable registration fees.