



SEI BULLETIN - NOVEMBER 2, 2016

Verifying Distributed Adaptive Real-Time Systems

In 2011, the U.S. government maintained a fleet of approximately 8,000 unmanned aerial systems (UAS), commonly referred to as "drones," a number that continues to grow. "No weapon system has had a more profound impact on the United States' ability to provide persistence on the battlefield than the UAVs," according to a report from the 2012 Defense Science Board. Making sure government and privately owned drones share international air space safely and effectively is a top priority for government officials. Distributed adaptive real-time (DART) systems are key to many areas of Department of Defense (DoD) capability, including the safe execution of autonomous, multi-UAS missions having civilian benefits. DART systems promise to revolutionize several such areas of mutual civilian-DoD interest, such as robotics, transportation, energy, and health care. To fully realize the potential of DART systems, however, the software controlling them must be engineered for high-assurance and certified to operate safely and effectively. In short, these systems must satisfy guaranteed and highly critical safety requirements (e.g., collision avoidance) while adapting smartly to achieve application requirements, such as protection coverage, while operating in dynamic and uncertain environments. In this SEI Blog post, James Edmondson and Sagar Chaki describe our architecture and approach to engineering high-assurance software for DART systems.

[Read the post.](#)

SEI NEWS

- [CMU and SEI's CERT Division to Host Fall ISO/IEC International C Programming Language Standards Committee](#)
- [CERT Director Richard Pethia Retires](#)
- [High School Students Get Crash Course in Cyber-Kinetic Tactical Operations](#)
- [SEI Announces 2016 Watts S. Humphrey Software Process Achievement Award Winners](#)

Visit Our Website

STAY CONNECTED



SEI BLOG

Recent posts:

[Security Modeling Tools](#)

[Verifying Distributed Adaptive Real-Time Systems](#)



SEI PODCAST SERIES

Available in audio and video formats.

[Predicting Quality Assurance with Software Metrics and Security Methods](#)

[Network Flow and Beyond](#)



SEI EVENTS

This week's featured events:

[FloCon 2017](#)

[Software Solutions Symposium](#)



SEI CYBER MINUTE

SEI experts deliver weekly snapshots of our latest research on the changing world of all things cyber. This week:

[SEI's Internet in a Box Spurs Realistic Training](#)



SEI TRAINING

Upcoming classes:

[Advanced Incident Handling](#)

November 13-17, 2016 (Arlington, Va.)



SEI CAREERS

This week's featured opportunities:

[Security Operations Technical Manager](#)

[Measuring What Matters: Security Metrics
Workshop](#)

November 30-December 1, 2016 (Arlington,
Va.)

[DevOps Engineer](#)

[Front-End Web Developer](#)

ABOUT THE SEI BULLETIN

The SEI Bulletin is a biweekly newsletter designed to keep you up to date on SEI news, events, research, and other matters of interest to the SEI community. We hope you find the SEI Bulletin useful and informative.

SEND US YOUR STORY

Do you have a story about how an SEI technology has positively affected your team or organization? If so, the SEI would like to hear about it. Send a short summary of your success to info@sei.cmu.edu and you could be featured in a future issue of the SEI Bulletin.

Software Engineering Institute | Carnegie Mellon University | 4500 Fifth Avenue, Pittsburgh, PA
15213

[Unsubscribe](#)

[Update Profile](#) | [About our service provider](#)

Sent by info@sei.cmu.edu in collaboration with



Try it free today