



Publishing Tools and Design Studios on the CPS-VO Portal

Integrated project team from
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Vision of CPS-VO Portal in 2018

- **From:** “...make CPS-VO an active resource which becomes a "**destination for doing**" rather than a repository and collaboration capability...”
- **To:** “...make CPS-VO an active resource which becomes a **destination for finding, trying, comparing and transitioning research artifacts** rather than a repository and collaboration capability...”

Increase direct impact of the CPS program via **fostering transitioning** and instead of creating “tools-as-a-service” for the community

Tools and Design Studios



The screenshot shows the website header with the CPS logo and NSF logo. Below the header is a navigation menu with options like Home, Tool Libraries, Integrated Tools, Design Studios, Submit Tool/Design Studio, Modboard (Hidden), and Competitions (Hidden). The main content area is titled 'CPS TOOLS AND DESIGN STUDIOS' and contains three columns: 'TOOL LIBRARIES', 'INTEGRATED TOOLS', and 'DESIGN STUDIOS'. Each column has a brief description and a 'READ MORE >' link. At the bottom, there is a section titled 'How to add your tools and design studios to the CPS-VO'.

- 3 levels with increasing depth
 - **Verification tool library (50+)**
 - **Integrated tools (3)**
 - **Design studios (7)**
- Each category has detailed “How to” information.
- Published artifacts are managed (updated, periodically tested)
- Integrated Tools and Design Studios are assigned VO Portal resources for execution

Student Competitions

THE 2018
CYBER-
PHYSICAL
SYSTEMS
CHALLENGE

Join Us!

CPS-VO » EDUCATION » COMPETITIONS » 2018 CPS CHALLENGE

2018 CPS Challenge

Home

Final Participants

How to Join

Invitee Registration

For Instructors

Travel Reimbursement

Wiki

Calendar

Activity Stream

Modboard

Design

Forums

Group Sims

Files

COLLABORATE

SUBGROUPS

- Education
 - CPS Security Summer Camps '18
 - CPS SummerCamp '17
 - Competitions
 - CPS-VO Active Resources Technologies

2018 NSF Student CPS Challenge
"No robot left behind!"

TIMPA airfield, 3250 N Reservation Rd, Marana, AZ 85653

5/18/2018:

Embry-Riddle Aeronautical University wins the 2018 CPS Challenge!

Final ranking:

1. Embry-Riddle Aeronautical University (ERAU)
Post-challenge team video
2. Halmstad University (Sweden)
Post-challenge team video
3. Vanderbilt University
4. University of Pennsylvania

Other awards:

- Halmstad University for the best UAV design.
- ERAU for most innovative lost UAV recovery method.

Media:

"Daytona Beach Students Dominate NSF's Autonomous Aerial Vehicles Competition", The Embry-Riddle Newsroom, June 7, 2018.

"Engineering students in second place in international drone competition", Halmstad University News, June 7, 2018.

IMAGINE

Your friend's quadrotor went down in a large field, and a storm is coming in. Looking for this lost drone needs a solution that could be repurposed to solve many

search zone for lost UAV

- Major positive impact on students
- Experience with 3 previous CPS student competitions
- General template for creating competitions
- Created service bundles for running competitions



Incentives Matter

- For researchers:
 - citations, reuse of results in other research projects, leave behind
 - seeds community development of code base (Github)
 - help in transitioning
 - education
- For industry:
 - seeing is believing
 - Identifying transitioning targets
- For government:
 - Evidence of ROI and impact

Goals for the Next 2 Years

- Keep infrastructure up-to-date
- Increase the number of tool libraries, integrated tools and design studios by at least an order of magnitude

