



Exceptional service in the national interest

DEFINING “REALLY WELL” WITH THE USE OF COMPETITIONS

RoboNation RoboSub Competition

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Systems (IROS) Detroit, MI

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ROBOSUB HISTORY



robonation



- Uniting people through technology to make the world a better place.
- Mission
 - Provide a pathway of hands-on educational experiences that empower students to find innovative solutions to global challenges.
- Programs (7)
 - SeaPerch, SeaGlide, GoSense
 - Intelligent Ground Vehicle Competition (IGVC)
 - Student Unmanned Aerial Competition (SUAS), International Aerial Robotics Competition (IARC)
 - RoboBoat, RoboSub, RobotX

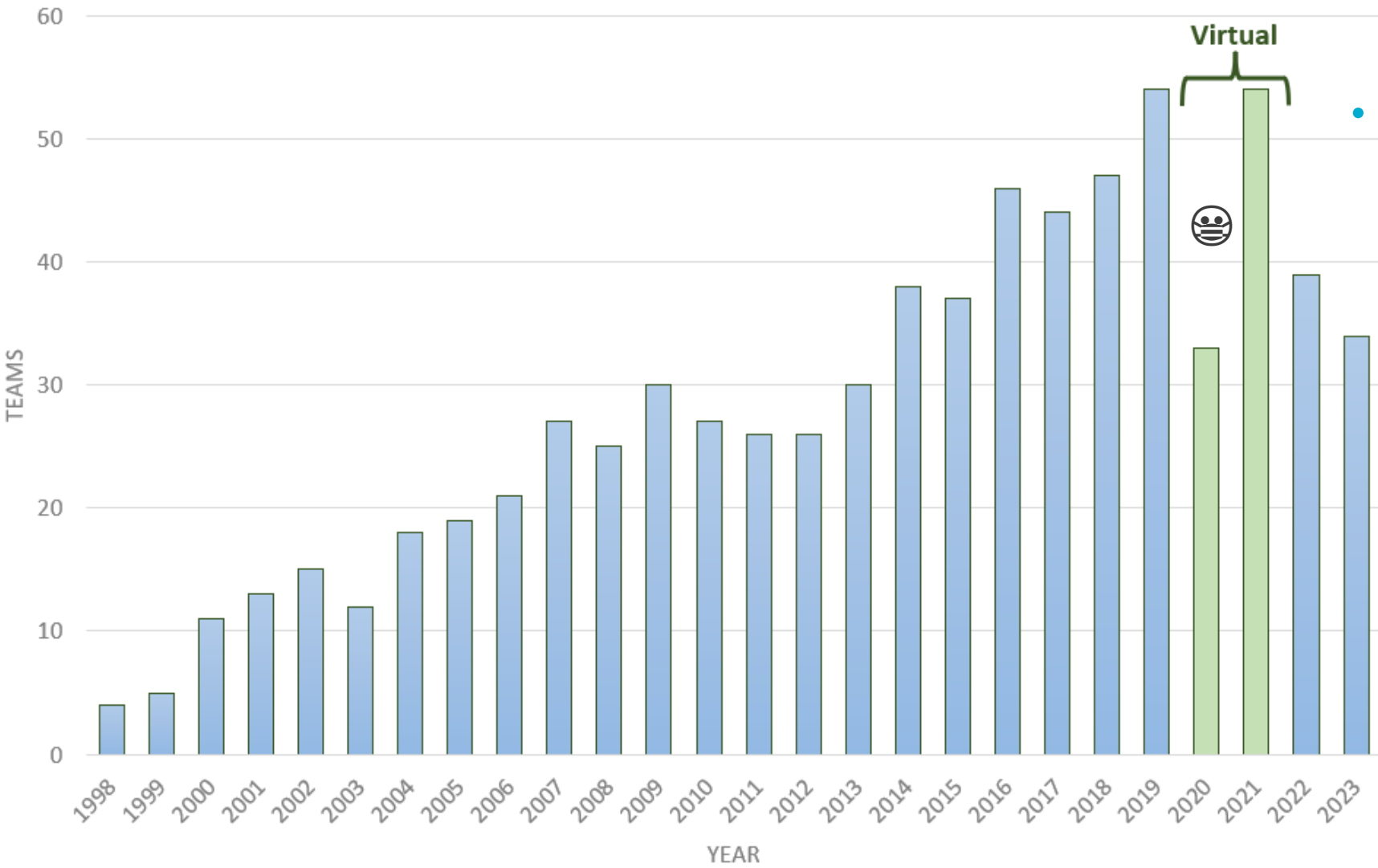


- Launched in 1997 (26 years ago)
 - College, High School
 - Under/Graduate level
 - Occasionally Middle School
- International (22 Countries)
 - Bangladesh, Brazil, Canada, China, Croatia
 - Egypt, Iceland, India, Israel, Japan, México, Norway
 - Pakistan, Poland, Russia, Singapore, South Korea, Spain, Sweden
 - Thailand, Turkey, United States



TEAMS

RoboSub



- 2023 Competition
 - 35 Teams
 - 42 Autonomous Underwater Vehicles (AUV)
 - 5 Countries
 - Bangladesh, Canada, India, Singapore, United States



LOCATIONS

CSS, Panama City, FL
1998, 1999



NIWC Pacific, San Diego, CA
2002-2019, 2023



Disney, Orlando, FL
2000



U of MD, College Park, MD
2022

- US Naval Academy, Annapolis, MD
 - 2001



COMPETITION

- The best part of competition is that through it we discover what we are capable of and how much more we can actually do than we ever believed possible.
 - Anonymous
- The ultimate victory in competition is derived from the inner satisfaction of knowing that you have done your best and that you have gotten the most out of what you had to give.
 - Howard Cosell
- The principle is competing against yourself. It's about self-improvement, about being better than you were the day before.
 - Steve Young
- The only competition worthy of a wise man is with himself
 - Washington Allston
- No competition, no progress
 - Bela Karolyi



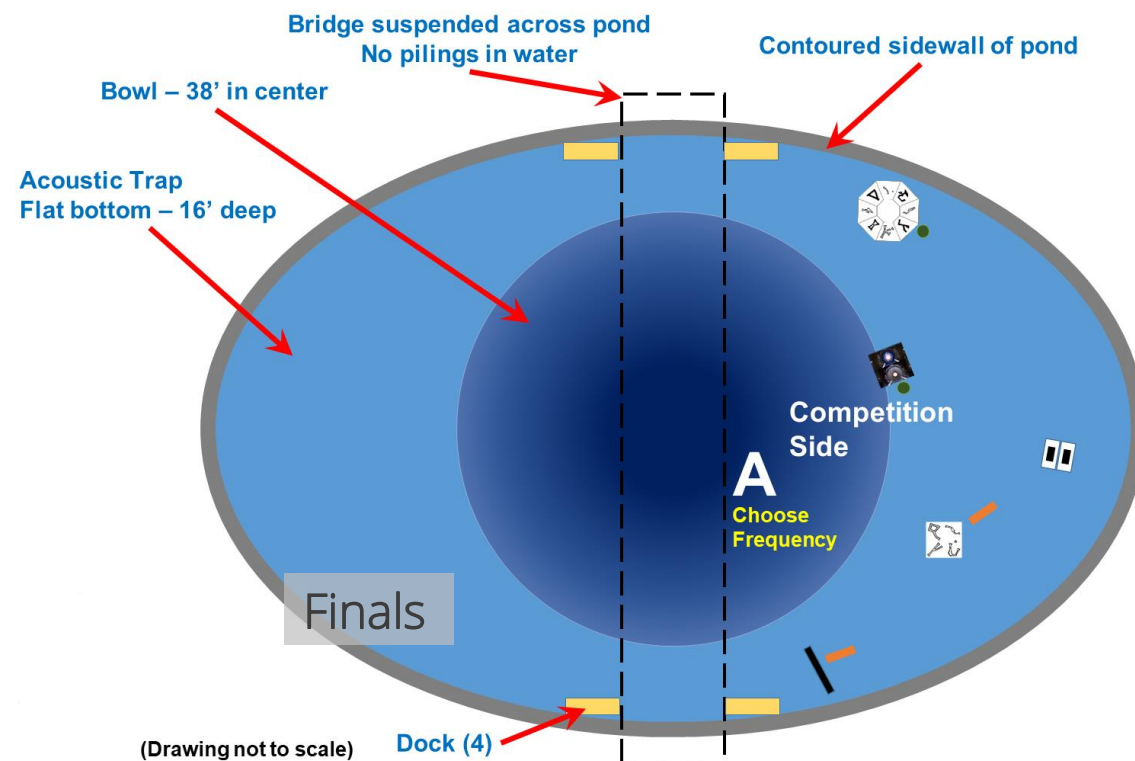
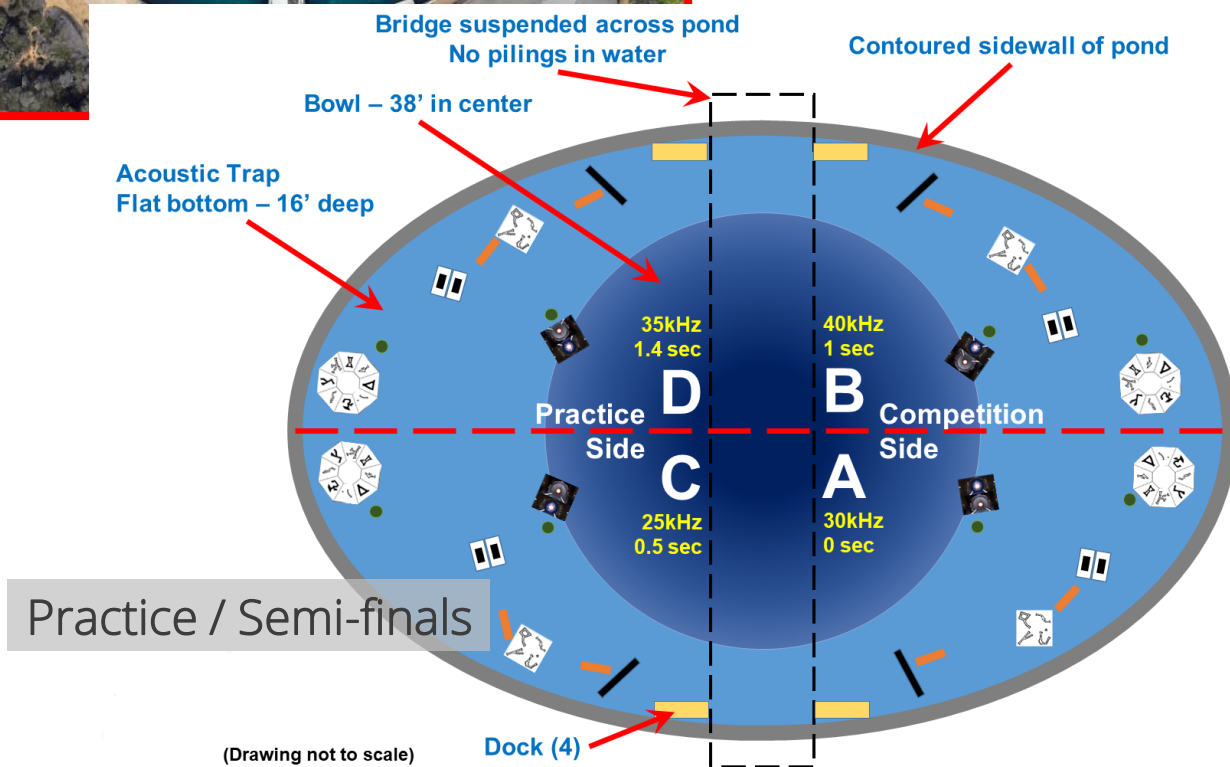
**2023
COMPETITION**



COURSE - WHIRLPOOL X-TREME (STARGATE THEME)

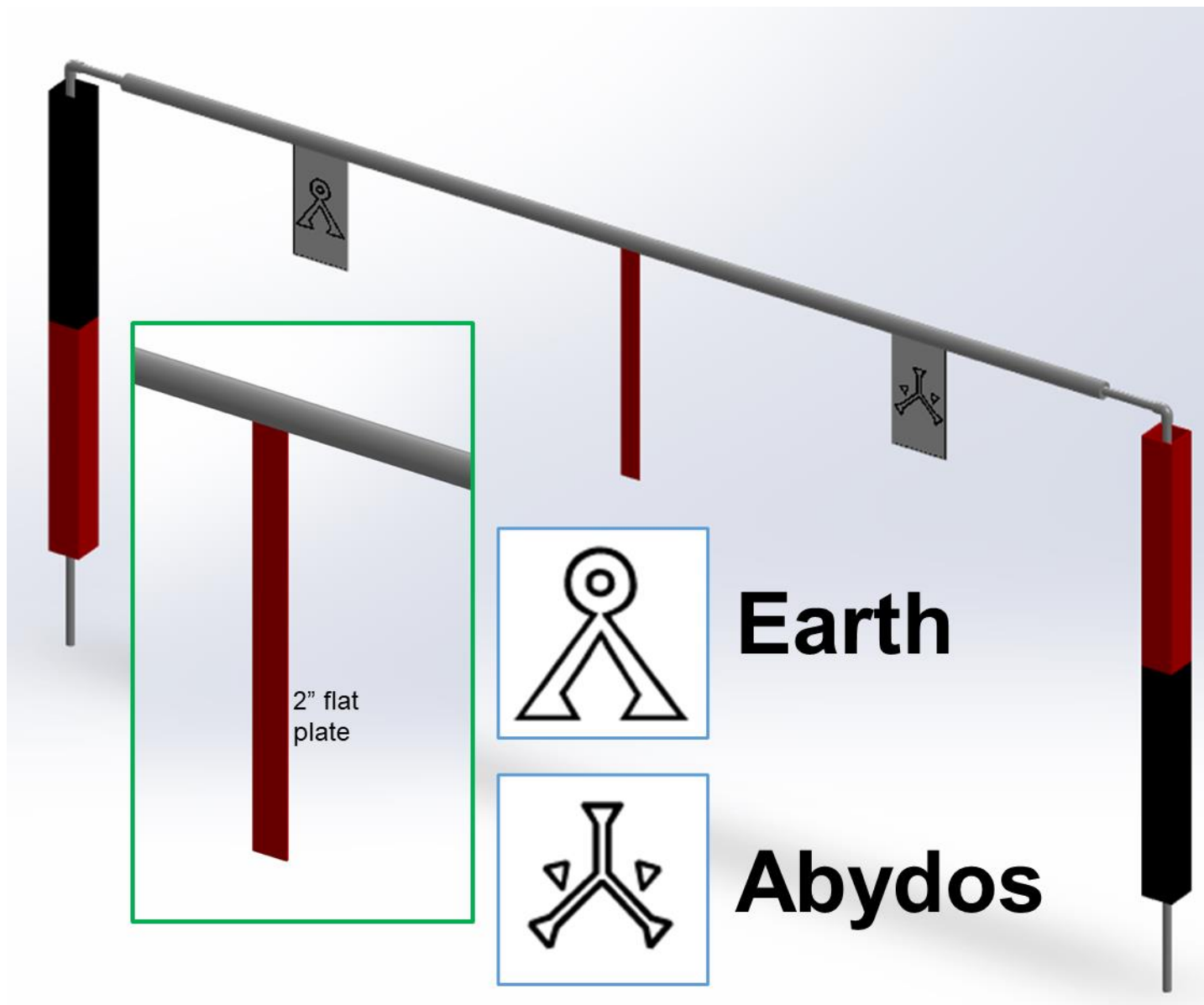


- TRANSDEC
 - 3 days of Practice
 - 2 days of Semi-finals
 - 1 day of Finals





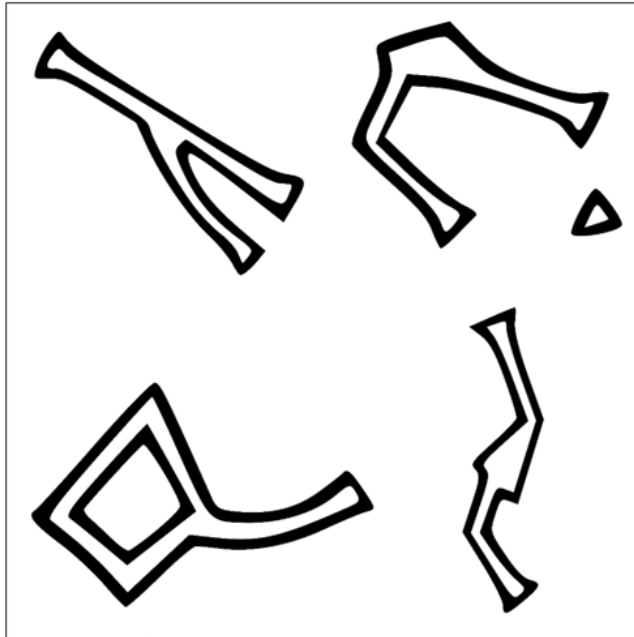
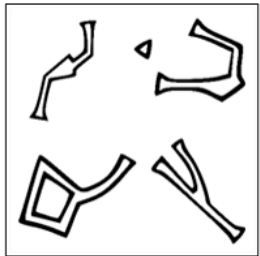
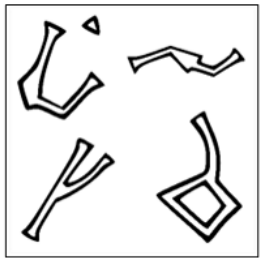
DESTINATION - GATE





START DIALING - BUOY

Square: 4ft x 4ft
(1.2m x 1.2m)



2-4ft
0.6-1.2m

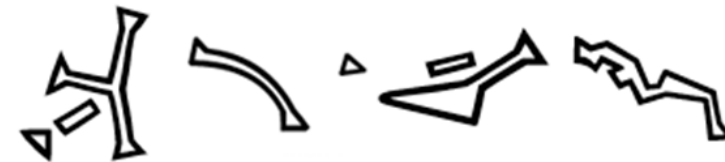
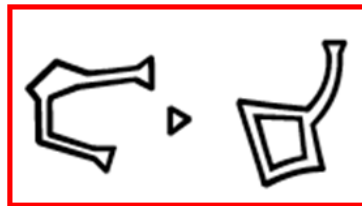


Floor

Abydos



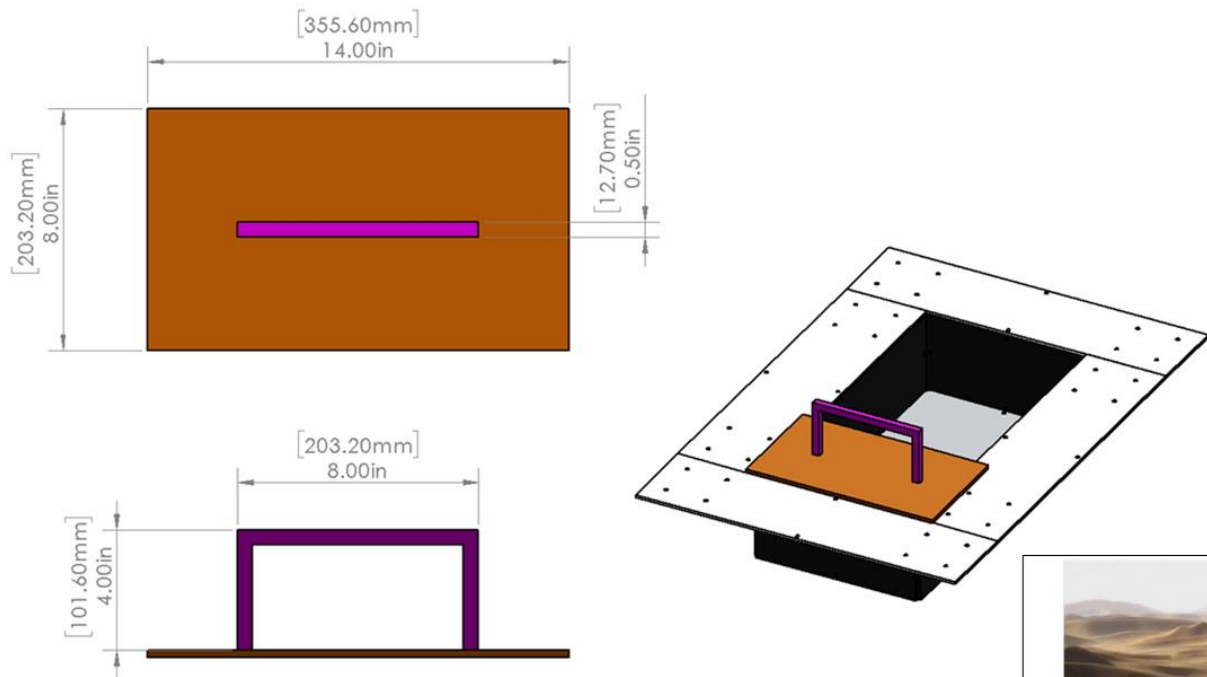
Earth



(Drawing **not** to scale)



LOCATION - BINS

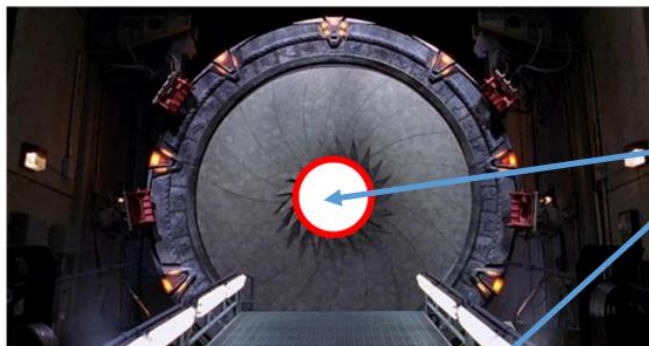


Bin
Inserts





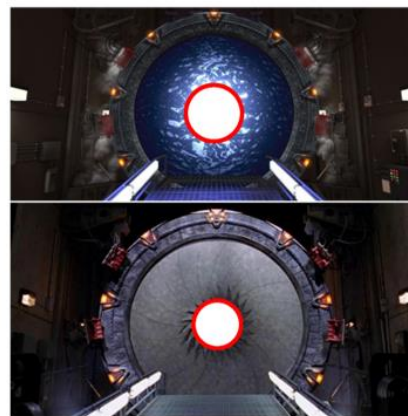
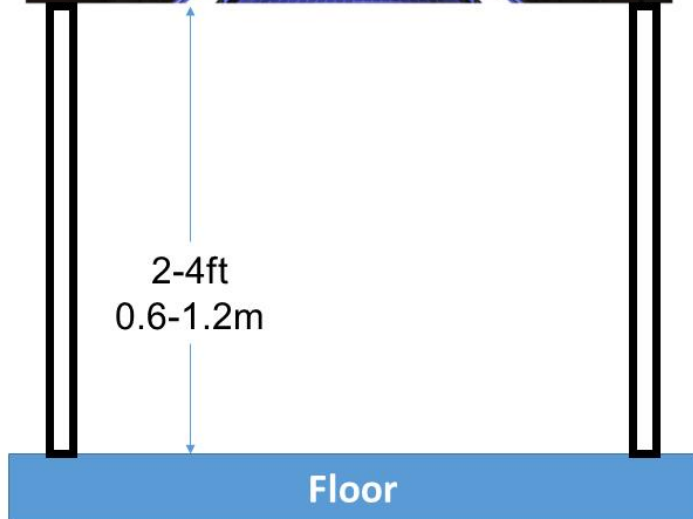
GOA'ULD ATTACK - TORPEDOES



Border: 0.5" (1.3cm)
Closed: 5" (13cm)
Open: 6" (15cm)



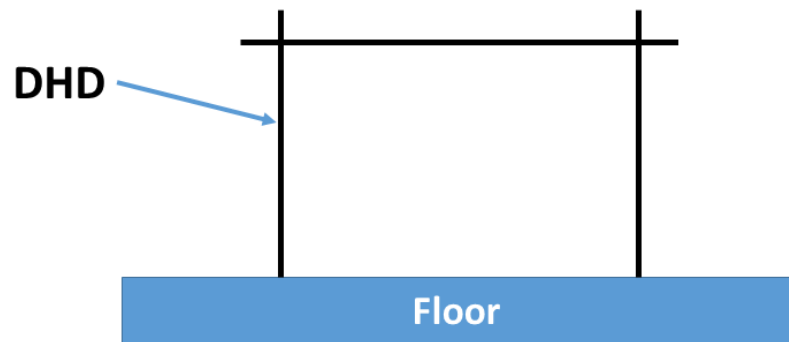
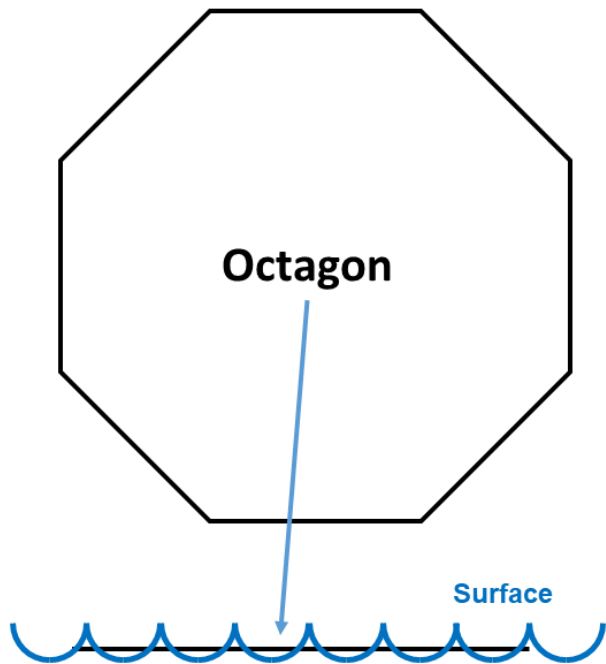
Square: 4ft x 4ft
(1.2m x 1.2m)



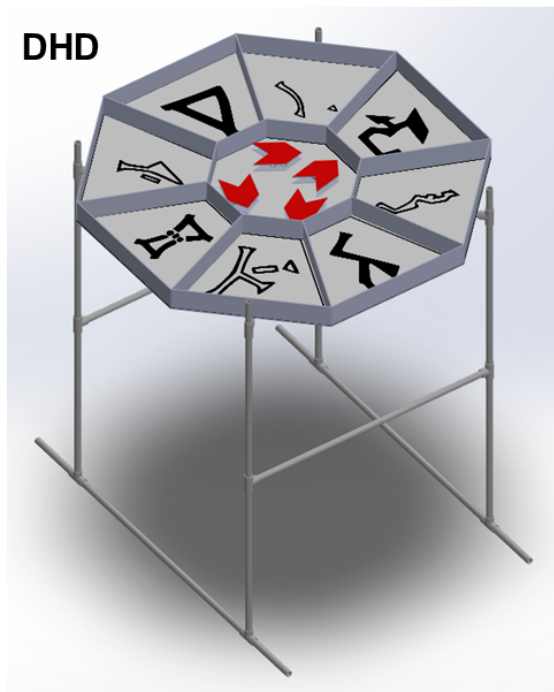
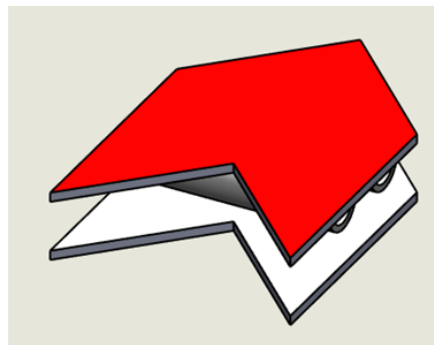
(Drawing **not** to scale)



ENGAGING CHEVRONS / DHD - OCTAGON



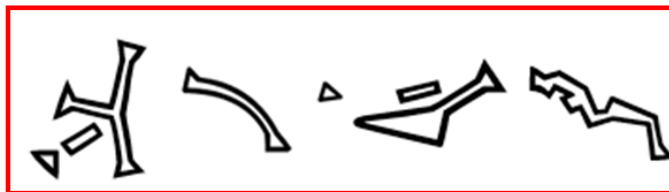
(Drawing **not** to scale)



Abydos



Earth





REALLY WELL



RESULTS – WHAT DOES “REALLY WELL” MEAN

- Getting through the gate
- Trying to do “everything”
- Third Chance
 - 6 teams made the cut-off
 - 2 in the wild-card slots for the finals
- Autonomy Finals (8 – 5 Countries)
 1. National University of Singapore (Singapore)
 2. BRAC University (Bangladesh)
 3. University of Alberta (Canada)
 4. Si Se Puede Foundation (USA)
 5. Amador Valley High School (USA)
 6. University of Maryland (USA)
 7. Advanced Science Technology & Art (USA)
 8. Indian Institute of Technology Bombay (India)
- *The ultimate victory in competition is derived from the inner satisfaction of knowing that you have done your best and that you have gotten the most out of what you had to give.*
 - Howard Cosell
- Other teams not in the finals
 - Carnegie Mellon, Cornell (USA)
 - Embry-Riddle, Duke, U of FL (USA)
 - École de technologie supérieure (Canada)



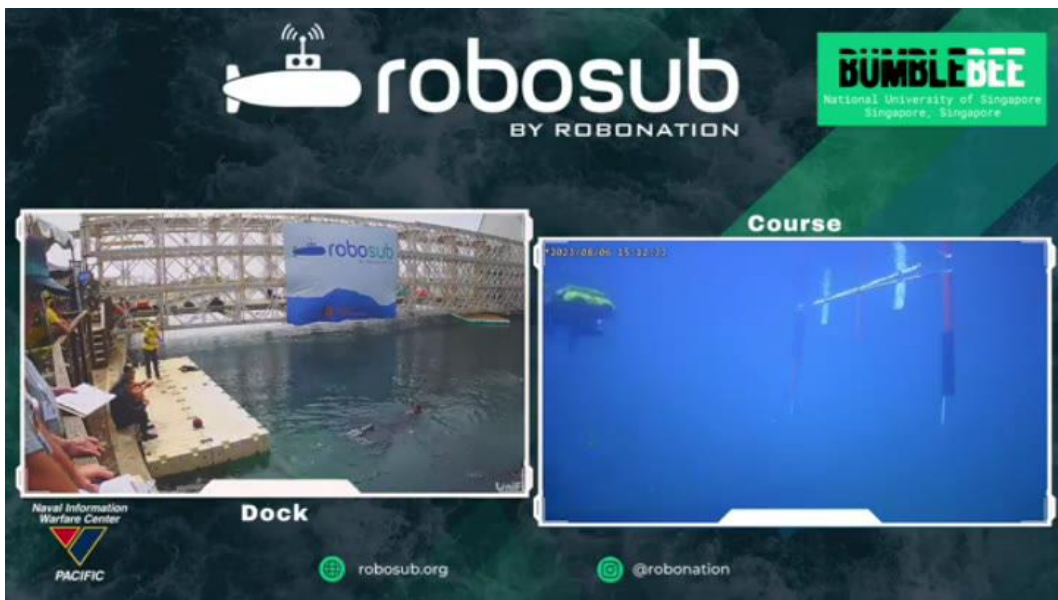
...REALLY WELL?



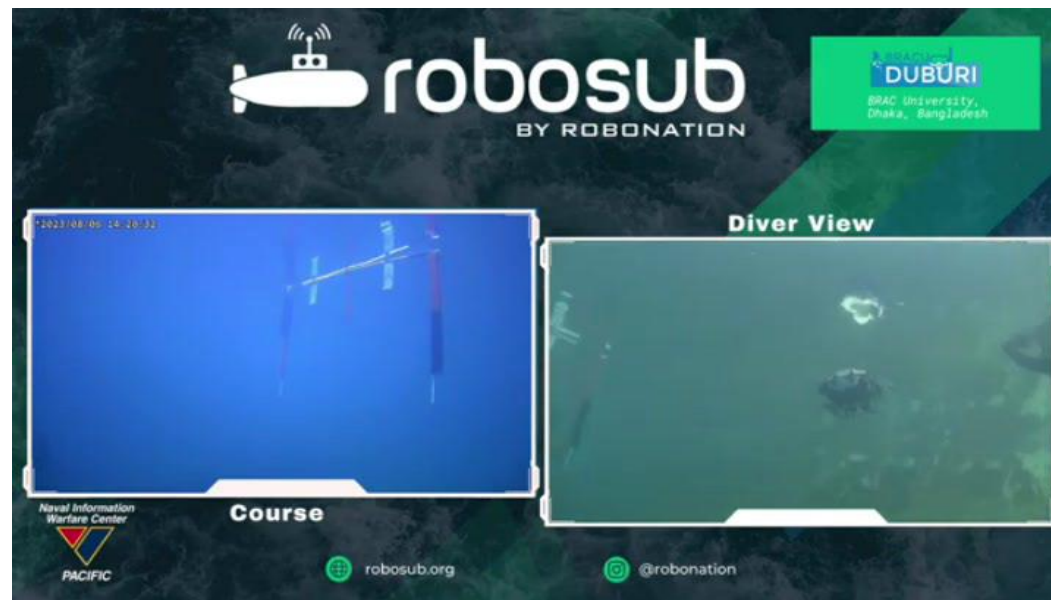
FINALS HIGHLIGHTS



1st



2nd



3rd



4th

