SunSat Visualization Guidebook

This two-year competition will link global scientific communities with university-based (and other) digital media labs for the purposes of advancing knowledge of space-based solar power satellites (SunSats) and illustrating their numerous Earth-energy applications.

Participants in this competition will produce high-impact digital art, supported by credible science, engineering and business plans, that best promote media understanding and public acceptance of a path forward using space satellites to deliver energy.

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Basic Project Requirements

The Visualization

…is the primary requirement of the competition entry. It's a video, animation, or interactive narrative that can stand alone as the explanation of the scientific concept. There are no length restrictions, but typical visualizations are under 10 minutes long. For project ideas, see Project Format Suggestions.

Click the link above to watch an introduction to the Space Based Solar Power app, *Sol Invictus*.

The Technical Brief

…backs up your visualization with scientific research, and explains the technology required to implement the subject of your visualization. The technical brief should be a summary version of a research paper or presentation that has undergone peer review, typically at a professional conference. The brief can be in the form of a document or slideshow.

View a sample technical brief

Click above and scroll to "Tech Brief."

The Economic Brief

…justifies the feasibility of your project, and proves that your team has explored a realistic implementation. The economic brief, typically a document or slideshow, explains how much the proposed innovation might cost, how funding for that project could be attained, how those funds would be spent, and an approximate timeline for completion. Many projects in the SunSat Competition are forward-thinking, and competition staff and judges understand that educated guesswork is involved in such an early-stage business plan.

View a sample economic brief

Click above and scroll to "Business Plan."

Recommended Team Skills

Your team can be quite diverse, but certain knowledge and skills are recommended to create a successful entry. There is no minimum team size, but below is a list of skills that are likely to be needed. Remember: no two projects are the same, and teams can learn and adapt as the project progresses.

- Science/engineering/business research
- Technical writing and document creation
- Leadership, team management and public speaking
- Marketing and social media management
- Scriptwriting and storyboarding
- 2D/3D digital art
- Camera operation
- Audio recording and editing
- Video editing and compositing
- Web design and implementation
- App development

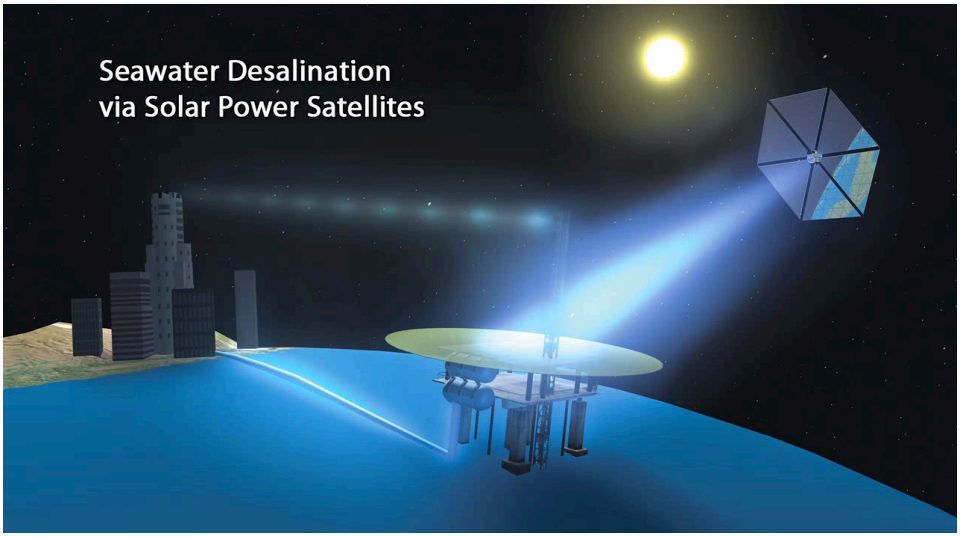
Project Format Suggestions

Aside from a few basic elements, we have no preconceived ideas about the specific form that your visualization will take, or the types of media that will convey your idea. Don't be afraid to alter, combine, or even disregard the following examples in search of a unique idea.

We are open to discussing your proposed topic and approach, and may be able to point you towards production resources. If your school or lab does not have the same tools that we have used in our examples, there are other free or inexpensive solutions available.

Animation

2D and 3D animation is an inexpensive, effective way to visualize scientific concepts. A satellite's orbit, a mockup of a new product or structure, a bird's eye view of a facility, a view of Earth from orbit…if you can design it, you can visualize it with digital art.

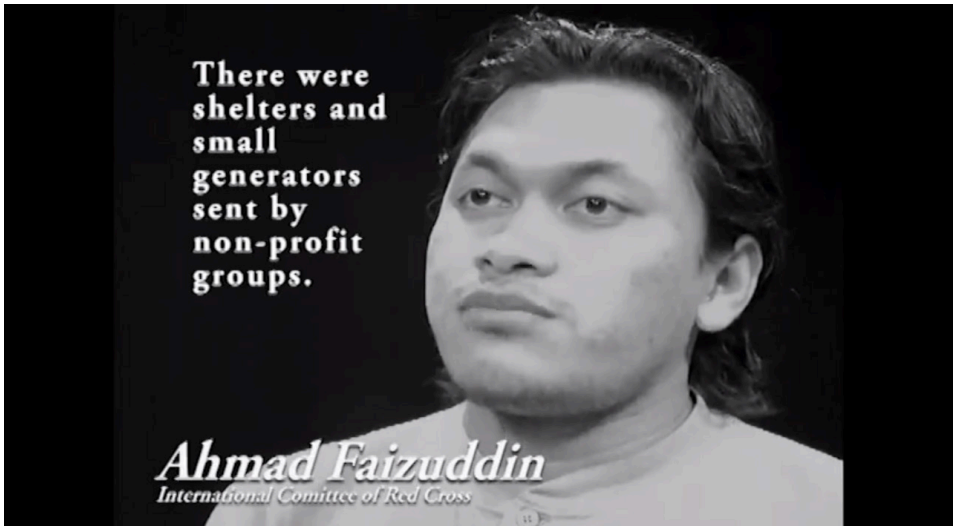


Click the above link to watch a sample 3D visualization.

In the above example, our team used 3D modeling and animation techniques to explain how decommissioned oil rigs could be converted into Space Based Solar Power receiving antennas. California's coastline, the oil rigs, the satellites, and stylized transmission beams were all created with Autodesk Maya, an example of industry standard modeling and animation software.

Video

If you have access to camera and audio recording equipment, the filming of people and places can add a human element to your story. You can record actual testimony of those involved with your concept, you can film industrial and manufacturing facilities, and you can use these techniques to form a strong link between concept and reality.



Click the above link to watch *Space Solar Power for Disaster Relief*.

The Disaster Relief visualization above uses testimony of individuals affected by natural disasters to explain how Space Based Solar Power can be used to address a need. A different

project used chroma key (also known as greenscreen) compositing, which combines digital art and film techniques. Check out other projects, available on the competition website, for this and other examples.

Next Steps

Form a team. Conceptualize a visualization that breaks down a point of credible scientific research. Begin to brainstorm, storyboard, write, and *document everything*. When you have the framework of a project in mind, submit your application and contact us.

The International SunSat Design Competition staff wishes you the best of luck! We are here for you to answer questions as needed.

Prizes, Publishing, and Legal Details

More in-depth information is available on the competition website, but below are the basic financial and legal details.

Prizes

In the first cycle, two First Place prizes of $10,000 and three Second Place prizes of $5,000 are expected to be awarded at the May 2014 International Space Development Conference in Los Angeles. For registered teams successfully completing the Feb. 2014 "significant progress point" an additional $1,000 incentive can be earned, and $1,000 travel assistance will be awarded to winners. At least one team member must be present at the ISDC conference.

Publishing

Since public awareness is the purpose of the SunSat Design Competition, winning visualizations will be published in the Online Journal of Space Communication, the Sol Invictus App, and in widely shared informational DVDs. These will be linked to National Space Society and Society of Satellite Professionals International websites. It is our hope that the hard work put into these creative visualizations of space solar power will be rewarded with viral global distribution.

Legal Details

You will retain rights to what you produce and your authorship will be acknowledged. Likewise, all text and visual material that you use in your contribution to the Competition not created by your team must be copyright cleared. Do not include content from unknown or uncredited sources.