

## **Fulldome Unity: The Need for Technical Exchange and Fulldome Standards**

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**Abstract.** Nearly all successful technology-based business areas thrive on technical exchange, recognition of excellence, and the establishment of industry standards. The fulldome industry has yet to institute such practices under a formal banner. The case is made for unity within the fulldome industry, including an annual summit that can act as a focal point for fulldome vendors, users and artisans.

It has been eight years since fulldome video systems debuted in the planetarium market. There are currently nearly a dozen integrators of fulldome video systems and numerous programmers, both institutional and independent. Fulldome video has been showcased to thousands at conferences such as ACM/SIGGRAPH and the DomeFest fulldome art show, in addition to numerous planetarium conferences. And by best count there are currently nearly 100 fulldome theaters around the world delivering compelling experiences to several million visitors per year. We are clearly growing into a full-fledged industry.

Despite these great strides, there is hardly a single publication available that independently documents the fulldome field. There is not a single formal specification defining how to master fulldome shows. And there is not a single piece of recent IPS literature describing the fulldome planetarium phenomenon and placing it into perspective for the planetarium community (aside from the early work by Kevin Scott). There is not yet a tradeshow or conference dedicated to technical exchange or the development of industry standards for digital domes. In fact, we still don't know what to call ourselves – is it a fulldome theater, a digital dome, an AllSky theater, a large-scale immersive environment, an AllDome display, a cyberdome, a planetarium or a collaborative virtual reality chamber?

This Fulldome Standards Summit was conceived to be the first of a series of Fulldome Summits designed to bring together industry leaders - from institutional to corporate, and from technical to artistic - to advance the state-of-the art in fulldome video through technical exchange and the formation of industry standards and recommended practices.

For the record, I conceived this summit while working with Tom Lucas of Lucas Productions and the Denver Museum of Nature & Science on a proposal to the US National Science Foundation (NSF) for a fulldome planetarium show on black holes. Tom approached Spitz, my employer at the time, for help with distributing this original production. I explained that there weren't any formal standards for show distribution, then asked if NSF might be interested in funding an effort to create some industry standards. Ryan Wyatt, another proponent of fulldome standards, agreed to join the effort as Co-Chair. The proposal team approved our summit sub-award to Spitz, who agreed to provide in-kind labor to manage the event. After the customary rounds of delays, our proposal was awarded by NSF early this year. Thanks to IPS President John

Elvert and conference host Jose Guirado, the first Fulldome Summit was invited in as a special session of IPS.

This summit is our gift to the fulldome community. It is yours to nurture and grow as our industry grows. Whether we evolve into digital space theaters, cyberdome gaming centers, immersive digital cinemas or something completely different, we all have one thing in common. We are manufacturers, integrators, theater operators and artisans working in a powerful new medium that will touch the lives of many millions of visitors, most of whom are young people in their formative years. Let us never lose sight of the fact that this is very important work, not just for ourselves, but for our children and our communities.

What I would leave with you is this thought: it is better to grow together than to struggle alone. By joining forces professionally in an open exchange of ideas, by recognizing excellence and innovation, and by establishing new standards and practices, we improve our industry and better fulfill our missions. Please allow me to elaborate.

There will always be industry trade secrets and proprietary tools and techniques. At the same time, there are certain problems that lend themselves to the synergetic mind that arise when a group of industry leaders gather and share their dreams, frustrations and successes. Focused paper sessions, panels and networking opportunities build such synergy, and also provide excellent educational opportunities for newcomers.

Such conference activities are always more productive when participants maintain a professional attitude by checking their ego at the door and by dropping the sales and marketing hype when making presentations. Professional integrity dictates that, while here, we place the advancement of our collective mission over our personal, corporate or institutional agendas. I will admit that this sometimes requires a little discipline.

Every profession has its rising stars, its brilliant talent, and its long-time contributors. Most of us could easily point to a dozen or more people in this room who have advanced dome theater arts and sciences in fundamental ways – our jobs would not be the same without them. Yet this remains a thankless profession. We currently do not have a means of formally recognizing our most talented innovators and contributors for their efforts. As many know, Hollywood's Academy of Motion Picture Arts and Sciences presents hundreds of Oscar awards every year for technical and artistic achievement. Isn't it time that we, as a community, show a little gratitude to a small handful of our hardest working and most talented peers? A pat on the back and perhaps a small plaque on the wall is the least we can do for these folks who have poured their life's energies into making this a better field for us all.

Finally we have the issue of standards. Even within the diverse world of traditional planetariums, Loch-Ness Productions and Sky-Skan managed to carve out and publish a standard for all-sky slide projection a number of years ago. I will leave it to my Co-Chair Ryan Wyatt, our keynote speaker Blair Parkin and others to discuss the imperatives for industry standards, recommended practices and a common nomenclature. It is hard work

that can only be initiated at this conference. But it is a worthy cause that will forever change how we do business, how we educate newcomers, and how we are perceived by outsiders.

Good standards are an expression of existing industry practices, not the forced imposition of theoretical dictums. During our sessions today and tomorrow, I would ask you all to pay keen attention not to our differences, but to our common ground. Our most robust standards will arise from areas where we are already largely in agreement. The more difficult areas to agree on will likely sort themselves out over time, or be approached after we've already successfully tackled the easy topics.

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