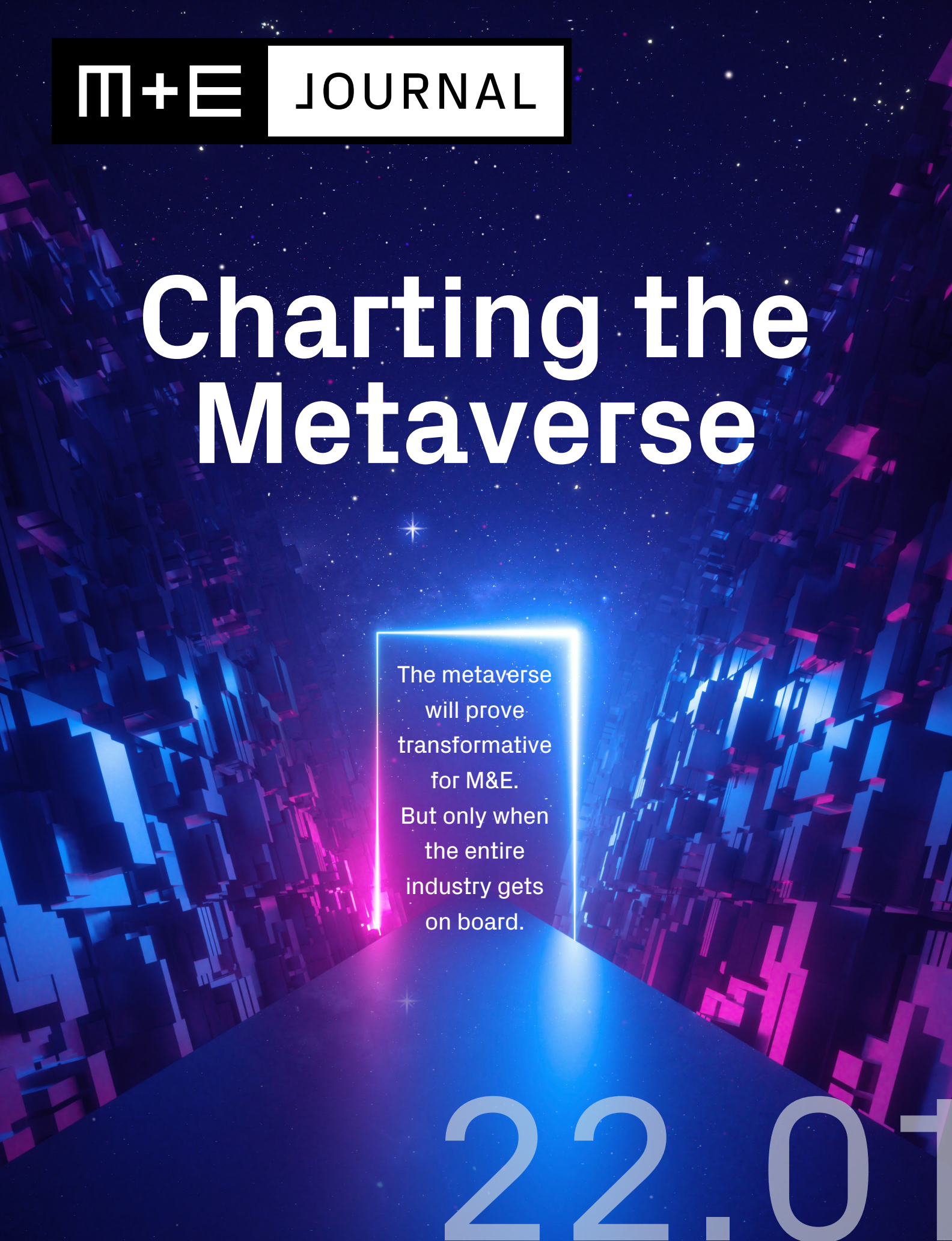
M+E JOURNAL
Charting the Metaverse
The metaverse will prove transformative for M&E. But only when the entire industry gets on board.
22.01

‘THAT’S NOT A DATA CENTER’

By Eric Rigney, VP, and Sean Tajkowski, Technical Director, MEDCA

The term data center must be defined. By and large, the M&E industry is unaware of what exactly constitutes a data center and the standard boards that govern their construction and maintenance.

When M&E pictures a data center, it typically envisions hyper-scale installations like Amazon Web Services (AWS), Microsoft Azure, Google Cloud, and so forth, with its rows and rows of racks filled with servers, routers, and data storage devices. As a result, since Hollywood isn’t normally in the business of building hyper-scale data centers, it sees no need to concern itself with data center infrastructure standards. It’s not their field of expertise.

This uneducated view of what constitutes a data center plays a large role in setting Hollywood up for the self-inflicted crisis described above. In actuality, data centers encompass much more than hyper-scale installations. The data center spectrum stretches from the hyper-scale cloud support and edge data centers of which typically Hollywood recognizes but encompasses service installations all the way down to the personal data acquisition devices like cell phones and wrist watches that we carry and wear. Whether Hollywood is aware of it or not, its stages, machine and equipment rooms, facilities, production service carts and more are full-fledged data centers. Before discussing data center construction, the M&E community must first be made aware of its misperceptions. MEDCA tasked itself with bringing this fundamental awareness to the M&E industry.

Fun fact: The term “machine room” is a carry-over from when video and audio decks played a large role in production. “Machine” encompasses the mechanical nature of tape-based (and film-based before) technology with its motors, belts, gears. etc. M&E’s move to file-based workflows brought with it the installation of file-based (data) hardware. The correct term describing an installation of predominantly data processing hardware is ‘equipment room.’ That said, many film terms live on even though rarely is film used. Terms such as “reels,” “footage,” “rolling,” “speed,” “cut,” “MOS,” etc. are common nomenclature used in today’s file-based production workflows.

THE DATA CENTER SPECTRUM stretches from the hyper-scale cloud support and edge data centers of which Hollywood recognizes and encompasses service installations all the way down to the personal data acquisition devices.

To realize the benefits gained by a properly constructed data center, it helps not only to know what constitutes a data center, it helps also to realize which governing boards are tasked with defining what “properly constructed” means. Let’s begin by describing governing boards that do not oversee data center construction: the Society of Motion Picture and Television Engineers (SMPTE) and the Audio Engineering Society and European Broadcasting Union (AES/EBU). These stalwart boards of the Hollywood community respectively set standards for picture and sound for motion picture and sound production, postproduction, and exhibiting communities. For example, M&E production and post facilities configure rooms to see and hear how the program will look and sound in any other similarly configured room. The visual and acoustical standards for such reference environments were established and are regulated by SMPTE and AES/EBU.

As such, when and wherever that program is played

Sean Tajkowski *is the technical director of MEDCA. HE has been involved with the Media and Entertainment industry for more than 33 years. He currently provides audit and design services for mission critical environments for motion picture, broadcast, data centers and network operations centers. sean.tajkowski@medcaonline.org*

Eric Rigney *is VP of MEDCA. He is the former VP of post service operations for Sony Pictures, spending 20-plus years with the studio. He is currently with USC’s Entertainment Technology Center, studying sound reflection mitigation techniques within xR LED stages. eric.rigney@medcaonline.org*

back in any other reference room that fully adheres to SMPTE and AES/EBU standards, the program playback will look and sound the same as they will in any other properly configured reference room. Without these standards, when is white "too" bright or black "too" dark or a color "illegal"? When is loud, too loud, and which speaker(s) should the right sound channel truly play out of? Implementing these standards allows one studio to playback its program in any studio in North America with the same result. Interoperability defines this characteristic. Interoperability is one of many benefits that come with the implementation of an industry's standards and practices. While data centers process and send/receive picture and audio files, the medium is not audio/visual. It's data.

Hollywood is accustomed to following AV standards as established by its venerable governing boards: file formats, protocols, applications, etc. And while some overlap exists, in general, SMPTE focuses on picture and AES/EBU on sound. Neither focus on data center infrastructure. Data center construction standards and practices are overseen by governing boards established within the data industry. Therefore, facilities and service providers that build their data centers to data industry standards, whether an equipment room supporting a volumetric stage, a postproduction operation, or wireless video village with digital intermediate technician's (DIT) cart, carry with them the interoperability advantage of "plug'n'play," seamlessly interconnecting among themselves and the rest of the data world's infrastructure. For those operations less willing to avail themselves to decades of hard learned lessons of the data industry, a world the data industry built, relying instead on M&E tribal knowledge born of its own trials and tribulations, all but guarantee an unnecessary, painful, and costly experience.

The crux of M&E's forthcoming production crisis so defined, the importance of MEDCA grows clearer. Through education, advocating and encouraging Hollywood to acquire an overall awareness and appreciation of the world they unwittingly encroached: the data industry. Secondly, guide Hollywood toward the data industry's well-established standards and practices supporting data centers in general and M&E specifically.

By so doing, MEDCA aims to protect M&E's ever and exponentially growing investment in data centric technologies, processes, and operations supporting stages, facilities, service providers, and more. It is MEDCA's hope that someday soon Hollywood will look at a camera, light, or an edit or upload cart station, and realize that, "That is a data center." ⊞