Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matters of	)	
Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System	)	PS Docket No. 15-94
Protecting the Nation's Communications Systems from Cybersecurity Threats	)	PS Docket No. 22-329

COMMENTS OF THE SOCIETY OF BROADCAST ENGINEERS, INC.

The Society of Broadcast Engineers, Inc. ("SBE")[1] submits these comments in response to the National Association of Broadcasters' ("NAB's") Petition for Rulemaking (the "Petition")[2] filed in the above-captioned proceedings. The Petition requests that the Commission adopt "certain clarifications or amendments of the Commission's rules, as necessary, to allow, but not require, Emergency Alert System (EAS) participants to use software-based EAS encoder/decoder (endec) technology instead of a . . . physical hardware device to process EAS messages."[3] SBE wholeheartedly supports that request. The Commission's rules should provide broadcasters with the flexibility necessary for them to implement the best EAS solution for their station's specific operational circumstances, including Certified EAS equipment that is a flexible software-based solution.

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[1] SBE is a professional organization of television and radio engineers and those in related fields, with more than 4,000 members in 117 chapters worldwide.

[2] Petition for Rulemaking, *In re Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System & In re Protecting the Nation's Communications Systems from Cybersecurity Threats*, PS Docket Nos. 15-94 & 22-329 (Mar. 31, 2025).

[3] Petition, at 1.

I. Providing Broadcasters with Flexibility to Voluntarily Implement a Software-Based EAS Solution Would Provide Tangible Alerting and Other Regulatory Benefits, and Would Be a Natural Evolution of Our Nation's Alerting Infrastructure.

For nearly 75 years, the United States of America has benefitted from and relied upon the government's ability to quickly, safely, and reliably disseminate emergency information to the public via the nation's communications infrastructure. Across that period, the formats of and mechanisms by which such dissemination occurs have continually evolved and expanded to leverage technological advances.[4] NAB's Petition merely asks the Commission to take the next critical step in that evolution.

Currently, EAS endec equipment is provided for purchase solely in physical form, typically in a rack-mounted "box" containing specialized hardware and software particularized to EAS functionality.[5] Thus, to purchase EAS equipment one must purchase the physical product being offered by EAS equipment manufacturers (for purposes of these comments, "dedicated hardware"). By contrast, NAB's Petition asks the Commission to allow for manufacturers and broadcasters, on a voluntary basis, to alternatively deploy a flexible EAS software solution (for purposes of these comments, "flexible software-based")—i.e., software particularized to EAS

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[4] The initial, 1950s CONELRAD system was designed to distribute national emergency information in a highly specific manner and only via "key" AM stations. Subsequent evolutionary steps included the transition to the Emergency Broadcast System, the development of which opened up the alerting system to all broadcast stations and expanded the types of alerts that could be issued, as well as the transition to the current Emergency Alert System and, with it, the development of the Integrated Public Warning Alert System ("IPAWS") to distribute alerts via the internet, including Wireless Emergency Alerts. *See, e.g.*, Federal Emergency Management Agency, *FEMA Fact Sheet, Emergency Alert System (EAS)* (June 24, 2020), https://www.ready.gov/sites/default/files/2020-08/emergency-alert-system-eas-fact-sheet_2020.pdf.

[5] *See, e.g.*, Digital Alert Systems, *DASDEC-III* (last visited May 1, 2025), https://www.digitalalertsystems.com/emergency-alerting-messaging; Sage Alerting Systems, *Sage Digital ENDEC* (last visited May 1, 2025), https://www.sagealertingsystems.com/products.htm.

functionality but that may be run on any number of generic, readily available computing devices, without the need to purchase specific EAS "hardware" from an equipment manufacturer.

Importantly, and as NAB's Petition explains,[6] allowing EAS Participants to evolve to flexible software-based reception and distribution is not merely change for change's sake—such evolution is vital to ensuring the continued viability of the EAS. In particular, near the end of 2024 one of the two primary EAS hardware manufacturers announced that they were ceasing production of their physical EAS endec.[7] Although all broadcasters are affected by this development, radio broadcasters are likely to face resulting difficulties in significantly greater numbers, given that SBE believes a majority of radio stations currently rely on that particular manufacturer's hardware for EAS reception and distribution.[8] This, in turn, raises meaningful concerns for the EAS system as a whole, given that the nationwide daisy-chain method of alerting both overwhelmingly relies on radio stations as local primaries and has its complement of Primary Entry Point stations made up *entirely* of radio stations.[9]

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[6] *See, e.g.*, NAB Petition, at 3

[7] Sage Alerting Systems, *Announcements, News, and Other Items of Interest: ENDEC 3644 Hardware* (Dec. 3, 2024), https://www.sagealertingsystems.com/. Sage and Digital Alert Systems ("DAS") are the two manufacturers that currently provide the vast majority of broadcaster EAS hardware. *See, e.g.*, Comments of REC Networks, *In re Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94 (Nov. 22, 2022) (survey indicating that approximately 88.6% of radio respondents relied on SAGE or DAS).

[8] *See, e.g.*, Order, *In re Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, 38 FCC Rcd 11034, 11037 (2023) (quoting NAB and REC Networks that relevant manufacturer "serves 'a significant market share of both low power and full-power FM stations' as well as 'numerous television and multiple video programming distributor EAS Participants' "); Comments of REC Networks, *In re Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94 (Nov. 22, 2022) (survey indicating that approximately 60% of radio respondents relied on relevant manufacturer).

[9] *See, e.g.*, FEMA, *Broadcasters and Wireless Providers: National Public Warning System Stations* (Dec. 14, 2023), https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/broadcasters-wireless; 47 C.F.R. §§ 11.18(a) & (f).

Permitting broadcasters to use flexible software-based EAS equipment would open up another potential area of EAS development, both for broadcasters and equipment manufacturers. This could help fill the hole created by the aforementioned manufacturer's discontinuation of EAS hardware offerings. And, perhaps just as importantly, opening up the viability of flexible software-based EAS solutions could prevent a similar situation from arising in the future by providing more diverse EAS equipment development and deployment solutions such that the exit of a single manufacturer from the marketplace would not risk disabling the EAS infrastructure of so many of the key distribution points in the daisy-chain.

Moreover, even if the foregoing immediate concerns were not present, permitting broadcasters to voluntarily utilize flexible software-based EAS solutions would still bring meaningful alerting and regulatory benefits. Among other things, SBE agrees with NAB that a flexible software-based approach could meaningfully alleviate delays and other difficulties many broadcasters currently face when dealing with EAS equipment maintenance and repair.[10] For example, when a malfunction occurs with current, dedicated EAS hardware, stations often have to locate, schedule, and deploy a contract engineer to physically diagnose and repair the malfunction. Additionally, the equipment must sometimes be physically shipped all the way back to the manufacturer for repair (or to be manually updated). By contrast, if a malfunction were to occur with a flexible software-based solution due to the hardware on which it is hosted, the software could be moved to another hardware platform thus reducing down time. This would simplify EAS maintenance and limit the amount of time during which issues with the station's EAS equipment would prevent reception and/or distribution to the public of important EAS alerts.

[10] Petition, at 6.

Additionally, and more globally, permitting the voluntary use of flexible software-based EAS solutions could facilitate the continued evolution of the EAS overall. Software solutions might allow stations to more readily implement future FCC or FEMA changes to the current alerting ecosystem. And harmonizing broadcast EAS equipment with the other software-based components of broadcast infrastructure may open up additional possibilities for stations to more comprehensively incorporate alerting into the broadcast airchain.[11]

In sum, permitting broadcasters to implement flexible software-based EAS equipment if they so choose allows EAS equipment to evolve, helps provide a potential lifeline to stations whose dedicated EAS hardware is no longer being manufactured, and spurs meaningful beneficial developments in the EAS ecosystem both at the station level and overall.

II. Equipment Manufacturers and Broadcasters Already Have Experience Ensuring the Reliability and Security of IP-Connected EAS Equipment, and Any Lingering Security Concerns Specific to Software-Based EAS Solutions Can Be Addressed Through the Same or Similar Equipment Security and Certification Requirements as Those that Currently Apply to EAS Hardware.

As an initial matter, for more than a decade all current EAS hardware has been required to be connected to the internet.[12] Indeed, for nearly all EAS alerts FCC rules require stations to prioritize "use of the IP-based Common Alerting Protocol (CAP)," given that "CAP-based alerts will produce higher-quality audio messages, improve the availability of multilingual alerts, and ensure that more of the alerts displayed on television screens contain all of the information provided by government agencies that initiate them."[13] As a consequence, EAS equipment

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[11] *See id.* at 7.

[12] *See* Fifth Report & Order, *In re Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, 27 FCC Rcd 642, 695-96 (2022).

[13] Report & Order, *In re Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, 37 FCC Rcd 11844, 11845 (2022); *see also, e.g.*, 47 C.F.R. §§ 11.52(d)(2), 11.55(c)(2), 11.56.

manufacturers and broadcasters have been meaningfully engaged in ensuring the reliability and security of IP-connected EAS equipment for some time and, in SBE's experience, stations therefore typically use best practices to both restrict access to unauthorized users and otherwise mitigate cybersecurity threats. Equipment manufacturers and broadcasters should therefore already be well-positioned to analyze and implement security measures necessary to protect and ensure the reliability of flexible software-based EAS solutions.

Additional existing FCC rules provide supplementary security and reliability overlays. For instance, FCC rules provide that "[a]ccess to encoder programming shall be protected by a lock or other security measures . . . ."[14] All equipment must be configured "to reject all CAP-formatted EAS messages that include an invalid digital signature."[15] And all EAS encoders and decoders "must be Certified in accordance with the procedures in Part 2, Subpart J" of Chapter 1 of the Commission's rules.[16] SBE respectfully submits that the same or similar standards should apply to flexible software-based EAS equipment, because applying such standards will help to ensure that flexible software-based EAS solutions enjoy at least the same level of security and reliability as current dedicated hardware solutions.

Given the foregoing, there is no apparent reason why security or reliability concerns should foreclose broadcasters from being able to elect to use a flexible software-based EAS solution.[17]

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[14] 47 C.F.R. § 11.32(a)(1).

[15] *Id.* § 11.56(c).

[16] *Id.* § 11.34(a)-(c).

[17] As NAB's Petition notes, in some cases flexible software-based EAS solutions may actually provide *greater* security and reliability as compared to dedicated EAS hardware. For instance, flexible software-based EAS solutions might allow for the "immediate fail-over of functionality using multiple instances of EAS software in redundant, remotely-operated systems in diverse geographic locations (e.g., main and auxiliary studios and transmitter sites), thereby

III. The Commission Should Not Artificially Limit EAS Equipment Solutions and Should Instead Permit a Range of Options.

In its Petition, NAB notes that Digital Alert Systems "has described a 'hybrid virtual' approach it has designed" that would combine software- and hardware-based EAS solutions.[18] SBE expresses no opinion or preference for any specific EAS solution currently available or under development. Rather, SBE firmly supports FCC rule changes necessary to provide broadcasters with the flexibility to implement whatever EAS solution they deem best for their particular operations—be it dedicated hardware, flexible software-based, or some combination or hybrid of the two—so long as that EAS solution has been through all testing, compliance, and certification processes noted above and required by applicable FCC rules. Affording broadcasters such flexibility in turn will spur EAS equipment manufacturers to identify and develop the best possible EAS solutions, rather than be forced to work within unnecessary limitations that may either preclude viable solutions or artificially drive up equipment prices.

IV. SBE Agrees with NAB that Only Minor Rule Changes Will Likely Be Needed to Permit Voluntary Use of Flexible Software-Based EAS Solutions.

As NAB notes in its Petition, although the current Part 11 rules do not expressly contemplate flexible software-based EAS solutions or hybrid solutions (and instead only address dedicated EAS hardware), it is likely that only minor rule changes will be needed to allow more flexible use cases such as those described above.[19] In particular, SBE agrees with NAB that the Commission

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eliminating single points of failure common to many legacy hardware EAS installations today." Petition at 6-7.

[18] *Id.* at 5.

[19] *Id.* at 7-8.

should commence a rulemaking to modify Rule 11.2(e) to expressly permit "virtualized, software-based system[s]" and hybrid, software- and hardware-based solutions.[20]

Conclusion

The EAS is an invaluable national resource for rapid, safe, and reliable distribution of emergency information to serve the public and the public interest, and broadcasters have long served as the backbone of that system. Over the decades, the EAS has evolved and so, too, must the FCC's rules—both to embrace the benefits of technological development and to provide broadcasters with the flexibility necessary to ensure the continued viability of their stations' EAS operations. SBE respectfully urges the Commission to grant NAB's Petition and move forward with the rule changes necessary to allow broadcasters to implement, on a voluntary basis, software-based EAS solutions.

[20] *See id.* To the extent the Commission believes other Part 11 or other conforming rule changes are necessary or advisable, those issues of course may be addressed as part of the rulemaking proceeding once initiated.

Respectfully submitted,

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