

## **Xperi Inc’s Written Comments on TRAI’s Consultation Paper on Inputs for Formulation of National Broadcasting Policy - 2024 dated April 2, 2024**

### **BACKGROUND**

On 2nd April 2024, the Telecom Regulatory Authority of India (“**TRAI**”) issued the ‘Consultation Paper on Inputs for Formulation of National Broadcasting Policy 2024’ (“**2024 Consultation Paper**”), pursuant to the Ministry of Information and Broadcasting (“**MIB**”) 13th July 2023 letter seeking, inter-alia, the TRAI’s recommendations on formulating the National Broadcasting Policy (“**NBP**”) for India.

TRAI has sought comments on the robust policy roadmap in the broadcasting sector with an aim to attract investment, foster innovation, facilitate job creation and nurture skill development and strengthen public service broadcasting. Xperi Inc (“**Xperi**”) submits these comments in response to the above-captioned 2024 Consultation Paper.

Xperi applauds TRAI for seeking industry perspectives as it pursues modifications to the NBP. Our comments will address ideas and innovation in the radio sector as will be detailed below. Xperi supports TRAI’s inquiry as it would advance the future of broadcast services and public engagement across India.

### **INTRODUCTION**

Digital radio broadcasting is transforming radio operations across the world. Many digital technologies and services continue to provide interactive services and content to consumers. Analog radio is losing ground to these digital services and losing audience share in many markets. To compete, radio stations around the world are converting to digital radio broadcasting systems.

In the U.S., the Federal Communication Commission (“FCC”) first authorized digital broadcasts in 2002<sup>1</sup>. Since then, radio broadcasters and receiver manufacturers have continued to roll out digital audio broadcasting technology at a steady pace. Over 40 automobile manufacturers offer over 413 vehicle models with factory installed HD Radio receivers, with 193 models including HD Radio technology as a standard feature. As of April 2024, approximately 60% of all new vehicles delivered in the U.S. contained a factory-installed HD Radio receiver and the number of HD Radio-equipped cars in some radio markets exceeds 40%. To date, more than 105 million consumer products have an HD Radio digital receiver. Broadcasters have converted nearly 2,900 radio stations world-wide to digital broadcasts and offer over 5,200 digital audio programs on multicast channels using digital technology.<sup>2</sup>

HD Radio technology is a digital broadcast system for AM/MW and FM radio stations. HD Radio stations broadcast a digital signal over traditional radio frequencies, allowing for up to three additional channels of new content. Listeners can tune to their existing favorite radio station and hear new digital services with an HD Radio receiver. For example, let’s say a consumer’s favorite local radio station is on 96.9 FM: with HD Radio technology, that consumer can now access that same station on 96.9 HD1 where it is broadcasted in much higher quality digital sound, as well as with all new content on up to three additional stations: 96.9 HD2, 96.9 HD3, and 96.9 HD4.

It is evident that HD Radio broadcasting and digital radio services are thriving. The actions by FCC proposals along with regulatory activities in Canada and Mexico seek to expand digital radio services with the goals of improving efficient use of spectrum, providing broadcasters with technology to compete with other services, and offering an outlet for diversity of voices in the market. Broadcasters can take full advantage of the flexibility provided by HD Radio technology and efficiently increase the reach and robustness of their digital signals and services.

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<sup>1</sup> *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, First Report and Order, 17 FCC Rcd 19990 (2002).

<sup>2</sup> Source: Xperi Inc.  
Xperi Inc.

Xperi has a revered history of working with the radio industry world-wide. Our partnerships and technology services span 50,000 radio stations in 155 countries across 6 continents. Our HD Radio<sup>3</sup> technology, which is used by over 2800 AM/ FM stations in the U.S., Canada, and Mexico, offers many advantages like spectrum efficiency, sound quality, new content services, reliable emergency warning systems, multicast of multiple audio channels, and simulcast transmission of digital radio and analog radio broadcast signals together in the same frequency. Currently, HD Radio services broadcast over 126,000 hours of digital programming per day with over 61.5M hours of daily listening.<sup>3</sup>

Based on our experience, we believe that policy decisions which allow broadcasters to implement analog as well as digital broadcasts on their frequency assignments offer many benefits. For example, TRAI's recommendation allowing stations to voluntarily implement a digital radio transition, in addition to providing new audio channels and enhanced alerting and warning systems, will permit the continuation of analog broadcasting for 900+ million existing mobile receivers and will create the future for digital broadcasting programming.

Xperi agrees with TRAI that digital radio transition for new stations should be implemented in a reasonable time period and without added regulatory burdens. Additional guidance on the questions raised in the Issues for FM radio broadcasting, will also prevent other technologies from eroding radio listening. Other jurisdictions have benefitted from considering the following topics:

- Why analog radio is losing ground to digital services and losing audience share in many markets.
- What services and content other digital technologies are providing to consumers.
- How digital broadcasting is transforming radio operations across the world.
- How to help radio stations compete and increase monetization of the spectrum, by supporting the conversion to digital radio broadcasting systems, like HD Radio, to offer supplemental services and additional audio channels.

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<sup>3</sup> Source: Xperi Inc.  
Xperi Inc.

Our comments will summarize the experience from addressing these topics in different countries and are based on successful industry launches, beyond the experience excessive testing and field trials.

## **RESPONSES TO CONSULTATION PAPER 2024 QUERIES**

Xperi’s responses to the specific questions raised in the 2024 Consultation Paper, as they relate to digital radio, are provided below.

***Q1. Stakeholders are requested to provide their inputs in framing the Preamble, Vision, Mission and Broad Objectives for the formulation of the NBP.***

### **Response 1**

As a preliminary matter, Xperi believes that the following approach taken by several key markets (U.S., Canada, and Mexico) that have adopted HD Radio™ broadcasting would be beneficial for Indian digital radio broadcasting:

1. Creating a broadcasting policy that benefits the public interest, which will be served by the introduction of digital radio;
2. Formulating and adopting a government-supported transmission standard that allows universal operability of receivers (including existing receivers) by promulgating a standard that includes all of the technical elements of the In-Band-On-Channel (“**IBOC**”).
3. Facilitating an orderly transition to digital radio by promoting the development of digital radio broadcasting that provides listeners the maximum benefit of digital radio while considering the following benefits:
  - Efficiency of spectrum use;
  - Preservation and promotion of broadcast radio; and
  - Increased diversity of programming and services.

4. Creation of an institutional mechanism for on-going consultation/discussion between the private radio broadcasters and Government, which would provide a platform to private radio broadcasters to put forward the business operational issues.

Our specific comments on the titles/heads asked in this question, are given below:

#### Preamble

Radio signals are presently transmitted in analog mode in India. Analog radio broadcasting, when compared with digital broadcasting, is less efficient and faces some operational restrictions. Digital radio technologies have been developed to overcome the issues faced in analog broadcasting while providing additional capabilities. Digital broadcasting provides spectrum efficiency, higher sound quality, and more reliable emergency warning messaging.

#### Vision

The policy makers have the rare opportunity, through this present initiative, to ensure that the advantages of new technologies, such as digital radio, are made available, accessible, and affordable to everyone in India in a non-discriminatory manner. By introducing digital radio in India through a proven large-market solution, the policy makers would facilitate the creation of an ecosystem of digital radio broadcasting services through policy formulation, regulatory intervention, and fiscal incentives.

#### Mission

The policy makers should promulgate a policy that (a) ensures a smooth roll out of digital radio in a phased manner without causing disruption or high cost while ensuring quality of service; (b) enables an eco-system that propels digital radio technologies through IBOC to harness the power of this sector; and (c) secures and safeguards the interest of the users.

## Objectives: Goal and Strategies

Analog radio is losing audience share to emerging digital services in many markets. To compete, radio stations around the world are converting to digital radio broadcasting systems. In our experience, plans that allow broadcasters to implement analog as well as digital broadcasts provide efficiency and flexibility to keep radio successful.

Based on our experience working with broadcasters and regulatory agencies in multiple countries, we suggest the following topics and goals for consideration in the NBP most of which are derived from specific questions and wording from policy documents in other markets.<sup>4 5 6</sup> Addressing these topics in the NBP will set a clear roadmap for the adoption of digital radio operations in India.

- Convert broadcast technology to digital transmission;
- Develop a digital transmission policy that supports current analog services while allowing for seamless migration to new digital services;
- Enable cross-platform services between broadcast, IP, and OTT;
- Incentivize rapid adoption of technology through simplification of licensing process, equipment import, and international technology partnerships.

One of key objectives of the NBP must be to support the transition of FM operations from analog to hybrid analog-digital broadcast services. This will ensure the least disruption and a smooth transition to digital radio broadcasting.

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<sup>4</sup> *Broadcasting Regulatory Policy CRTC 2014-554*, Canadian Radio-television and Telecommunications Commission.

<sup>5</sup> *Comision Federal de Telecomunicaciones (COFETEL), Diario Oficial, 16 de Junio de 2011, June 16, 2011*

<sup>6</sup> *National Telecommunications Commission, Internal Memorandum, "Guidelines for the Operation of Digital FM Radio Broadcast", 11-11-2007*

Some specific goals and strategies for the above stated objective would be:

- Authorize digital radio rollout in a simulcast mode initially, maintaining legacy analog broadcasting as the market gradually transitions to full digital services. This approach will ensure sustainable revenues for the existing radio broadcasters thereby encouraging them to adopt digital broadcasting.
- The digital radio ecosystem may take some time to gain scale and some additional investment is required for broadcasters to grow their businesses. Accordingly, to encourage adoption of digital radio, we believe that any licensing policy be thoughtfully considered and ensured that it is not prohibitive or burdensome, such as not charging any additional license fee for digital transmissions in the short-term.
- Offer incentives for automobiles/mobile manufacturers to pre-install requisite hardware for ubiquitous digital radio services. Attendant measures towards granting fiscal incentives such as lower tax rates to manufacturers of digital radio receivers would help.

***Q6. What broad guiding principles, measures and strategies should be considered in the NBP to strengthen India's public service broadcaster (i.e. Prasar Bharati) to promote quality content creation, dissemination of DD and AIR channels and maximizing its global outreach? Also suggest, what support and measures should be provided for the proliferation of television and radio broadcasting services provided by the public service broadcaster in fulfilment of its mandate?***

India has a large diaspora across many continents and countries. We believe that AIR can establish content-sharing relationships with U.S and Canadian radio stations to provide AIR content on digital multicast channels in those markets as well as accessing North America content for ex-pats and workers living in India.

The content model has been adopted widely across the U.S. with many innovative providers targeting local communities and foreign nationals with programming from their home country. HD Radio stations currently carry materials from BBC in UK, Russian news and programming, Vietnam, as well as some commercial content from India.

All India Radio is currently missing this opportunity to reach markets in North America. Embracing digital broadcasting and establishing relationships with radio stations overseas would quickly expand the reach.

***Q12. What measures and strategies should be included in the National Broadcasting Policy to encourage expansion and ensure orderly growth and sustainability of FM Radio Stations and Community Radio Stations in the various cities of country including hilly and border areas? In what ways the policy can facilitate the integration of digital radio technologies into the existing FM radio infrastructure to improve audio quality, functionality and spectrum efficiency?***

Digital radio services are well suited to commercial broadcasting as well as community stations and low-power transmission. The wide-spread deployment of the HD Radio system has allowed the opportunity to implement the technology across various types of installations including multi-station combiner sites, single-frequency networks, and low-power FM.

The digital radio system has been successfully deployed across combiner (CTI) sites.<sup>7</sup> This successful deployment demonstrates the ability to share infrastructure and maintain operational integrity of digital services without generating interference.

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<sup>7</sup> Report ITU-R BS.2503-0, *In-band, on-channel digital sound (System C) transmission systems: Consideration for operational installations*, 03/2022

Additionally, single-frequency networks are well established in North America. Industry partners have studied this application and developed new innovations to maximize signal coverage area.<sup>8</sup>

***Q15. What policy and regulatory provisions would be required in the policy to enable and facilitate growth of digital terrestrial broadcasting in India. Stakeholders are requested to provide strategies for spectrum utilization, standards for terrestrial broadcasting, support required from the Government, timelines for implementation, changes to be brought in the current ecosystem and the international best practices. Please provide your comments with detailed justification and proper reasoning.***

The success of the digital radio broadcasting technology is dependent on government support, working together with broadcasters and product innovators, to establish policies to facilitate rapid expansion and equitable operations. Consumers expect attractive, affordable products that are easy to use, such as digital radio enabled phones and cars. And the broadcast industry must generate compelling content and programming to attract listeners.

Addressing these topics in the National Broadcasting Policy will set a clear roadmap for the adoption of digital radio operations in India.

- Adopt digital radio services and formulate related policies which (i) ensure a seamless transition from analog to digital, (ii) facilitate the introduction of enhanced auxiliary services, (iii) minimize regulatory burdens on MIB.
- Establish interference protection criteria to ensure the compatibility of all radio stations, both analog and digital, during and after the transition period.

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<sup>8</sup> *Single Frequency Networks for HD Radio, Philipp Schmid, Nautel, 08,2018;*  
[https://www.nautel.com/content/user\\_files/2018/08/Single-Frequency-Networks-for-HD-Radio-2018.pdf](https://www.nautel.com/content/user_files/2018/08/Single-Frequency-Networks-for-HD-Radio-2018.pdf)

- Establish *ab initio* a transition plan that provides appropriate protection for analog radio for an interim period but also fosters the transition to an all-digital environment. The transition plan should contain the transition process with legal certainty for all parties involved, the objective conditions for process follow-up to evaluate the development, and the objectives, goals, requirements, conditions and obligations.
- Adopt a digital radio broadcast transmission standard that will ensure that all digital radio broadcast receivers in India are compatible with all digital radio broadcast transmitters and will enable the continuation of a ubiquitous and free radio service in India.
- A digital signal must have minimal impact on co- and adjacent analog and digital stations.
- A digital signal must have minimal impact on the host analog station.
- A digital signal must serve an area comparable to a station's current analog coverage.
- The digital radio broadcast system should be able to accommodate future upgrades and features.
- Digital radio services should be in multiple languages to cater to the linguistic diversity of India.
- Availability of digital receivers and transmitters at commercially reasonable prices. In line with the vision of Atmanirbhar Bharat, the MIB should launch the Production-Linked Incentive (PLI) schemes for digital receivers to catalyze the growth of the digital receiver base in India.

***Q16. How the strategies with respect to audience measurement and rating system in National Broadcasting Policy can ensure, address and encourage:***

- i. Establishment of a transparent, credible, and technologically equipped television audience measurement system that accurately reflects viewer preferences and behaviour***
- ii. Expansion of the sample size to adequately represent the diverse landscape of television viewership, considering the anticipated growth in TV households***
- iii. Integration of data from non-linear sources from digital media to cover cross-platform content consumption habits***
- iv. Establishing a policy framework for conducting radio audience measurement in India***
- v. Encouraging multiple agencies to ensure healthy competition and enhancing service quality of measurement and methodologies***

*vi. Adoption and utilization of modern technologies*

Since the inception of radio broadcasting in the 1920's, audience engagement and measurement systems have been a critical component to broadcast business planning and advertising-based revenue worldwide. Historically, audience measurement has been carried out through listener surveys or through background monitors that would detect tuning or "listen" to the program content in the background. In one example, Measurement companies would recruit "listeners" or respondents via telephone call out or postal mail. Participation in the survey was incentivized and weighted by demographic and market profile. Participants would agree to track their listening habits during a week-long survey period. Paper logs or "diaries" are collected by the survey company, reviewed for rating bias and rating distortion, an algorithm is applied to reflect the market and DMA population, and listening ratings are calculated. As technology advanced, inaudible watermarks were inserted into the audio program which would trigger background listening devices. Surveys are still popular, although, remain inaccurate, subject to human response and projection. One of the leading ratings companies expects all paper diaries to be replaced by mobile diaries by Q3 2025. Incentive amounts are expected to remain similar with this shift to collecting data on the devices the respondents prefer. Generally, the accuracy of any audience measurement technique is limited by the size of the measurement audience, the demographics of the participants, and response errors. Ideally, a measurement system should be ubiquitous and transparent to the listener.

Recent innovations in technology have resulted in new concepts for measuring audience engagement. The advent of hybrid radio services (combining OTA broadcast with IP connections) can link audience measurement directly into the radio function for a receiver with

IP connectivity. It's easier than ever for new IP based services to find their way into the car, portable receiver, and connected home platforms and broadcasters around the world are able to leverage the benefits of broadcast and the enhancements enabled by IP connectivity to keep their audiences tuning into broadcast radio.

Over the past few years, Xperi has created an innovative platform through DTS AutoStage ensuring broadcasters retain editorial control of content, simplify radio station discovery, deliver an enhanced listening experience all while delivering rich in-car listening analytics and metrics.<sup>9</sup> These analytics, which are currently available to all broadcaster via the DTS AutoStage Broadcaster Portal, tell the story of your audience engagement with details of where, when, what and how your audience is engaging with your content. These analytics are currently being used by broadcasters around the world to secure new advertising revenue, refine audio playlists and optimizer network operations. This system supports all major broadcast standards (analog, HD Radio, DAB and CDR) and is delivering an enhanced in-car radio experience for almost 50,000 radio stations in 155 countries and is deployed in over 7 million cars from 12 global OEMs.

A government policy on audience measurement, at least for broadcast radio, should consider the following points;

- Enabling connected devices to utilize broadcast and IP access for real-time, accurate measurement and statistics on radio listening habits;
- Allowing for location-based and time-based measurement improves the level of detail and analytics collected to aid in business development and program planning;

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<sup>9</sup> *Radio's future in the connected car – Your station, your audience and the digital dashboard – Hosted by Xperi; [Radio Days Europe 2024](#)*

- Protecting user privacy by allowing device-level measurement without requesting specifics of personal identifiable information;

As is currently being demonstrated and utilized in many radio markets across North America, Europe, and Asia, this approach to audience measurement is providing valuable insights into listening patterns and revising the approach radio broadcasters are using to target programming and advertisements.

***Q19. Keeping in mind the immense role of broadcasting during disasters, how can the latest technologies be effectively utilized to provide disaster alerts and timely updates on television/mobile/radio during disasters? Elaborate with proper justifications.***

HD Radio IBOC and other technologies enable the appropriate authority to notify people's radio receivers with emergency notifications. Digital emergency alerting is available today and rapidly becoming an essential part of the emergency alerting ecosystem. The government's efforts to improve the nation's emergency alerting system should consider enhancing individual elements of the alert, such as readability of the visual component, sound quality of the audio component, alert information conveyed, accessibility for persons with visual and hearing disabilities, and accessibility by persons from other language groups.

Other countries and regulatory agencies are addressing how to relay visual information through emergency alerts. TRAI and MIB should continue using digital radio broadcasting technology as a model for the future emergency alerting infrastructure and should actively incorporate the digital radio emergency alerting protocol into its enhanced emergency alerting plans.

Xperi supports modernizing the emergency alerting infrastructure and seeks to include digital technologies in future emergency alerting guidelines. Our HD Radio IBOC technology currently supports digital emergency alerting and notifications. Xperi has previously submitted a test report to the FCC summarizing the response of the HD Radio alert messaging during the U.S. National Test conducted in

August 2021.<sup>10</sup> These tests demonstrate the accessibility, reliability, and resilience of the HD Radio digital emergency alert service.

Digital HD Radio technology provides many of the desired improvements as a complement to digital alerting capabilities through expanded notification features and because digital HD Radio technology can be integrated with consumer electronics products in both the vehicle and the home, it should be an integral part of the emergency alerting ecosystem of the future.

HD Radio broadcasting technology has advanced service and content capabilities well-suited for improving the nation's warning network and will ensure that people receive relevant emergency alerts where and when they need them. HD Radio technology offers benefits as a redundant alerting service through its ability to deliver targeted alerts, Common Alerting Protocol ("CAP") messages, and enhanced emergency alerting capabilities.

Xperi supports the government's efforts to improve the nation's emergency alerting system by examining the feasibility of delivering alerts. As government agencies evaluate ways to update the emergency alert system to improve alerts to consumers, including how to integrate streaming services and other digital technologies into the alert notification infrastructure, they should consider the numerous enhanced emergency alerting capabilities afforded by HD Radio technology.

1. *HD Radio Broadcasting Visual Notifications*

HD Radio services today support text and image transmission. While the images are low-resolution (200px x 200px), this would be sufficient to send hazard-symbol images to all radios equipped with HD Radio Artist Experience. For HD Radio products, the visual text message can be incorporated into standard program fields or as the text of an EA message for pop-up display.

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<sup>10</sup> *HD Radio Test Submission*, Xperi test report submitted to FCC Jan. 21, 2022;  
<https://www.fcc.gov/ecfs/search/search-filings/filing/1012182198299>

Future upgrade can support higher resolution images and short video files (H-265 compression). HD Radio can transmit non-real-time files to support additional messaging capability. Audio clips or text transcripts may be efficiently transmitted in support of alert messaging services.

The HD Radio system formats CAP alerts for efficient transmission utilizing the required CAP message fields. The entire CAP message may be sent as a full XML file in future upgrades.

2. *Xperi is Developing Additional Alerting Capabilities That Will Further Enhance HD Radio Emergency Alerts.*

In addition to the current digital emergency alerting capabilities available through HD Radio broadcasting (e.g., the text and low-resolution images described above), Xperi's digital broadcasting features will soon include additional enhanced emergency alerting services, including multimedia visual information and smart-home device compatibility. Further, Xperi will soon be able to offer anti-spoofing validation for streaming service alert messaging. These enhanced features further guarantee redundant emergency alerting, ensuring that more Americans have access to critical warning messages that are delivered from reliable alert originators.

HD Radio receivers currently deliver limited multimedia content, such as thumbnail images. Soon, these capabilities will expand to allow over-the-air transmission of graphics, images, pictures, maps, and URL links, which can provide enhanced critical information about threats.<sup>11</sup> These could include maps of hurricane forecast tracks, mandatory and voluntary evacuation zones in anticipation of natural disasters, and links with detailed information about localized threats. Such data-rich transmissions will be available for both in-home as well as automobile-based receivers and will be capable of providing more detailed and

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<sup>11</sup> *Working Group 2 Comprehensive Re-imagining of Emergency Alerting Final Report – Comprehensive Re-imagining of Emergency Alerting; Communications Security, Reliability and Interoperability, Council; June 2018.*

geo-targeted information on localized threats than would otherwise be available over a standard AM or FM emergency broadcast.

Moreover, as demonstrated at CES 2020, Xperi is developing HD Radio applications and devices that can transmit alert messaging to “smart-home” devices. These devices and applications will decode and parse HD Radio broadcasts so the alert message can be reformatted for further localized distribution to other devices within a home network. Internet-enabled devices (including smart televisions and -internet-capable radios) use either proprietary or open protocols to establish communications amongst devices and to transmit or receive data. Those protocols can be extended to support an HD Radio broadcasting-enabled CAP layer, thus allowing devices configured to use different alerting mechanisms to display and announce emergency alerts. To accomplish this compatibility, alert notifications would be implemented on a system level to reach across the application level. For example, HD Radio applications on a smart receiver could connect through Wi-Fi, which would give them the ability to transmit alert notifications to other smart IoT devices within the home. Such redundant digital alerting capabilities could be implemented through routine software and firmware updates, which are commonplace for modern entertainment and Internet-of-Things devices.

Xperi is also developing service validation protocols that would address the important concerns regarding alert message spoofing. Given the significance of automobiles in the ecosystem for distribution of HD Radio broadcasts, Xperi is already attuned to the concerns of manufacturers about potential cybersecurity vulnerabilities that bad actors could exploit to compromise vehicle computers and other critical subsystems.<sup>12</sup> Xperi’s system will prevent spoofing of legitimate over-the-air radio signals by allowing receivers to validate the authenticity of HD Radio broadcast signals. This approach uses industry-

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<sup>12</sup> See, e.g., Steve Tengler, *The Top Twenty Unspoken Automotive Cybersecurity Questions and Their Risks*, Forbes (Sep. 1, 2020), <https://www.forbes.com/sites/stevetengler/2020/09/01/the-top-twenty-unspoken-automotive-cybersecurity-questions-and-their-risks/?sh=4e43a05c457d>.

standard cryptographic techniques to generate and transmit an authentication message embedded in the HD Radio broadcast transmission. Future HD Radio receivers will locally and independently generate the same message and compare it to the received message, thereby authenticating the signal if they match. This same validation tool can be used to examine the authenticity of alert messages transmitted via Internet streaming services, providing an additional level of security for digital emergency alerting messages no matter how they are delivered.

By ensuring that streaming services and other digital alerting media are backed up by redundant HD Radio alerting, the government can fulfill its desire to leverage the capabilities of the Internet to enhance the alerting capabilities of the radio and television broadcasters. HD Radio broadcasting can play an important role in creating a digital alerting system that features resiliency, redundancy, and accessibility because HD Radio technology does not require internet or cellular reception, has the potential to reach over 90% of the population, and can provide targeted alerts to relevant locations. Given the portability of HD Radio receivers – through car infotainment systems, car and home radios, and portable reception devices – digital radio is already an integral part of the alert infrastructure in North America. Moreover, the future interoperability of HD Radio solutions with cellphones, smart devices, and smart home products ensures that they can work in concert with Internet streaming services to provide redundancy in emergency scenarios. Therefore, TRAI, MIB, and other government agencies should incorporate HD Radio services into their plans for a future digital alerting ecosystem.

## **SUMMARY**

Xperi believes that a NBP should address the standardization and regulatory guidelines for digital radio operations in India. We encourage dialog between government stakeholders and the radio industry to adopt a policy which addresses the interests and concerns of the industry for sustainable operations and growth. Our comments are offered in the context of promoting a successful transition to digital radio based on the experiences from other markets.



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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ashruf El-Dinary". The signature is fluid and cursive, with a long horizontal stroke at the end.

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