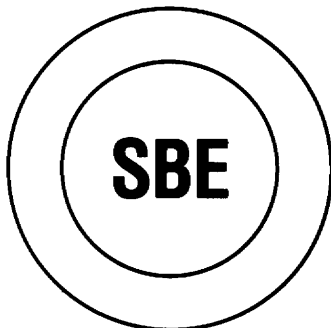


**Comments of the  
Society of Broadcast Engineers, Inc.**

**Safety Cast Corporation Request  
for Special Temporary Authority  
Station WB9XTT  
OET File Number 0183-EX-ST-2003**

July 30, 2003

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**SOCIETY OF BROADCAST ENGINEERS, INC.**  
Indianapolis, Indiana

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
Safety Cast Corporation Request for Special Temporary Authority	)	Experimental Station WB9XTT OET File Number 0183-EX-ST-2003
	)	

To: The Commission

**Comments of the Society of Broadcast Engineers, Inc.**

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members world wide, hereby respectfully submits its comments regarding the request for Special Temporary Authority (“STA”) filed by Safety Cast Corporation for its Experimental Radio Station WB9XTT.<sup>1</sup> These comments are being submitted in response to the Commission’s June 30, 2003, Public Notice, DA 03-2109, asking for comments within 30 days. Although SBE is aware of the Commission’s July 29, 2003, Public Notice, announcing that the Safety Cast application was dismissed, and therefore that comment was no longer being sought, SBE is electing to file its comments anyway. This decision is for two reasons: first, a lot of effort (all volunteer) has gone into the preparation of these SBE comments, and SBE thinks that the record should reflect the important points raised in these comments. Second, SBE notes that while the Commission has dismissed the Safety Cast application, it did so “without prejudice,” and even invited Safety Cast to file FCC Form 309 (Application for Authority to Construct or Make Changes in an International or Experimental Broadcast Station) with the Media Bureau. Accordingly, SBE fears that the Safety Cast system may well re-appear, and would like to be able to refer to its “Safety Cast” comments, should that happen.

**I. Fundamental Approach Is Flawed**

1. The Safety Cast system is based on the premise that it is acceptable for Safety Cast transmitters in emergency vehicles to cause intentional harmful interference to the FM broadcasting service with its FM band brute force capture technology (and eventually to the AM broadcast band, if Safety Cast were to be successful in convincing the Commission not only to approve the Safety Cast system in its present FM band form, but to also extend that approach to the AM broadcast

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<sup>1</sup> The FCC initially granted this license on June 11, 2003, but then rescinded the grant on June 13, 2003, due to possible interference to the Emergency Alert System (EAS).

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band). No matter how good the perceived end, that end does not justify a flawed means. The system proposed by Safety Cast is deeply and fundamentally flawed, and would set a dangerous precedent for damage to spectrum integrity.

2. It would further appear that the approach proposed by Safety Cast would inherently be in violation of Section 5.85(c) of the Commission's Experimental Radio Service rules. Section 5.85(c) states:

Frequency assignments will be made only on the condition that harmful interference will not be caused to any station operating in accordance with the Table of Frequency Allocation of Part 2 of this chapter.

This, of course, includes all FM (and AM) broadcast stations. Further, Section 5.5 ("Definition of Terms") defines "harmful interference" as

Any radiation or induction that endangers the functioning of a radionavigation or safety service, or obstructs or repeatedly interrupts a radio service operating in accordance with the Table of Frequency Allocations and other provisions of Part 2 of this chapter. (Underlining added).

In SBE's opinion, the Safety Cast system, if allowed, would precisely match the definition of "harmful interference."

3. It is not clear whether Safety Cast is proposing a Part 15 Subpart C Intentional Radiator device pursuant to Section 15.239 of the FCC Rules ("Operation in the Band 88–108 MHz"), or devices that would require the users to obtain individual radio licenses. The fact that Safety Cast has applied for an Experimental Radio authorization suggests that the Safety Cast transmitters exceed the 250  $\mu$ Volt/meter (48.0 dBu) at 3 meters field strength limit of Section 15.239(b), and would not qualify as a Part 15 device.<sup>2</sup> And, in any event, Part 15 devices are subject to Section 15.5(b) of the FCC Rules, which prohibits Part 15 devices from causing harmful interference.

### II. SBE Agrees With the Informal Objection Filed by WMRA

4. SBE has carefully read the Informal Objection filed by Mr. William D. Fawcett, Director of Engineering of FM Station WMRA, Channel 214B, 90.7 MHz, Harrisonburg, Virginia, operated by the Board of Visitors of James Madison University. The WMRA filing is excellent and SBE wishes to go on record as agreeing with all points raised in that Informal Objection.

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<sup>2</sup> SBE notes that for an ERP of 80 mW, the predicted field strength at 3.0 meters from the transmitting antenna would be 116.4 dBu, which would be far in excess of the 48 dBu Part 15 limit.

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5. In addition to the points raised in the WMRA Informal Objection, SBE notes that the Safety Cast system makes the unwarranted presumption that drivers in nearby vehicles will a) have their radio turned on; b) not be tuned to an AM band station; c) not be tuned to a satellite radio station; d) not be using the radio's cassette or CD player (for radios so equipped); or e) not be using a cell phone. These are a lot of assumptions, and do not justify the trade off of allowing a system that presumes that its message is more important than information a broadcast station might be transmitting at the same instant (up to and including local or national Emergency Alert System (EAS) warnings or alerts, or Amber alerts). Safety Cast's claim that interruptions would be of short duration does not sufficiently mitigate the potential damage to justify SBE's support. There are no built-in assurances that the system will not be used in a frequent and successive mode in the same way as emergency vehicle drivers now use lights and sirens. FM broadcasters should not be put at risk of "death by a thousand knife cuts."

6. Yet another issue is interference between two or more emergency vehicles, each transmitting a Safety Cast warning signal on all FM channels. Safety Cast offers no explanation on how it would control interference between multiple emergency vehicles, each Safety Cast equipped. Of course, multiple Safety Cast-equipped emergency vehicles responding to, or departing from, the same emergency would only aggravate the interference to reception of authorized FM broadcast signals. The same problem would apply to emergency vehicle aggregation points such as hospitals or major arterials leading to major medical facilities.

7. And what of foreign language radio stations? It would appear that the Safety Cast warning messages can only be generated in English, yet the proposed system would override foreign language radio broadcasts with an English language warning. If one reasonably assumes that 1) a foreign language radio station exists in a market because there are many residents there who speak that language and 2) that some of those persons may have only partial, or even no, understanding of English language broadcasts, then it would be the height of presumptiveness to assume that an overriding, English-only signal would be a good idea. Perhaps another "smart chip" (discussed in more detail in a subsequent paragraph), to keep track of the coverage areas of all foreign-language FM stations, and to substitute a foreign language version of the programmed safety message? This hardly seems practical.

### **III. RM-9719 Parallels**

8. In October 1999, SBE filed in opposition to a Petition for Rulemaking, RM-9719, by Federal Signal Corporation, asking the Commission to create a new Emergency Data Radio Service ("ERDS") on FM Channel 200 (87.9 MHz). Like the Federal Signal Corporation proposal, which

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made unsubstantiated claims such as “ERDS could save thousands of lives and billions of dollars in unnecessary health costs and property losses,” the Safety Cast application similarly makes unsubstantiated claims. For example, the record shows Safety Cast claims that its mobile transmitter system “...has been developed to meet the needs of the Partnership for Public Warning (PPW), Department of Homeland Security, FEMA...” The OET Safety Cast application file, Number 0183-EX-ST-2003, shows that FCC OET staffers sent two e-mails to Safety Cast, asking it to substantiate its claimed ties to the Department of Homeland Security. SBE notes that the e-mail thread, included as one of several exhibits associated with the Safety Cast experimental application on the OET web page, does not show that Safety Cast was ever able to prove its Department of Homeland Security claim.

9. Other support and endorsement is claimed. For example, the Safety Cast web site links to a May 16, 2002, speech by Dr. Peter Ward, then the ongoing Chairman of the Partnership for Public Warning (PPW) Board of Trustees. Safety Cast appears to be claiming the endorsement of its product by PPW. However, SBE has been told that according to explicit PPW Board policy, PPW does not endorse any technologies or products. In the opinion of the then outgoing Secretary of PPW, Richard A. Rudman,<sup>3</sup> the personal comments cited by Safety Cast and made by outgoing Chairman Ward appear to have overstepped what he should have properly said as PPW’s then chairman.

10. Two other RM-9719 parallels are that of an annoyance factor, in the event a Safety Cast transmitter is inadvertently left on for extended periods, and a startle factor for drivers intent on their main task of driving. When the program interruption takes place, drivers may become distracted after being startled. Figuring a malfunction of the radio, the driver may reach over and start fiddling with the radio receiver controls and lose track of the primary mission: safely driving with an approaching emergency vehicle.

11. The “annoyance” factor would also apply to homeowners, broadcast station studios and control points, and other people or businesses who live, work or function near a main thoroughfare, arterial highway, hospital, fire station or similar places where Safety Cast-enabled vehicles would travel and/or congregate. There is no need or excuse of disrupting fixed receivers. Indeed, excessive use of the Safety Cast system is likely to drive consumers from listening to FM (and possibly AM) broadcasts, to audio services not repeatedly disrupted, such as satellite radio and CD players. There may also be worsened neighborhood relations with police and other emergency

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<sup>3</sup> Mr. Rudman is an active member of the SBE’s FCC Liaison and EAS committees.

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services if Safety Cast transmitters in police and other emergency vehicles are synchronized with interference to radio reception.

12. As was so well addressed by the WMRA Informal Objection, the Safety Cast system, like the fortunately not adopted ERDS, poses an interference threat to EAS. And, whereas ERDS represented only an interference threat to five FM band channels (three adjacent channels plus two image-interference channels), the Safety Cast proposal is an interference threat to all one hundred FM channels. There is also the potential for Safety Cast equipped vehicles to cause interference to the reception of TV Channel 6 stations; TV stations also broadcast EAS alerts and warnings, and often non-EAS “news bulletin” warnings. Further, this interference would be most likely to occur at the worst possible time: that is, when there is a major emergency, with numerous public safety vehicles in transit AND radio stations sending EAS alerts.

13. Although SBE notes that Safety Cast has posted to its web site the claim that its transmitters would have a “smart chip” that “would be programmed with black-out areas where the [Safety Cast] transmission would be halted immediately in the presence of an EAS alert,” SBE is dubious of this claim. The only thing unique about an EAS transmission are the three short header bursts and the three shorter EOM (end of message) bursts. SBE does not believe that Safety Cast transmitters would be able to reliably determine when an EAS transmission is in process, particularly if the Safety Cast transmitter is “on” when the EAS bursts are broadcast, thus “deafening” its own reception of the broadcast EAS alert. How can Safety Cast hear and respond to a transmission it is in the processing of jamming?

14. Yet another issue is that of Safety Cast transmitters generating out-of-band intermodulation products when the public safety vehicle’s two-way system transmits; this could generate spurious signals in the aeronautical band, for example. SBE urges the Commission to require Safety Cast to demonstrate that its FM band, all-channel transmitting system is not so broadband as to act as a very effective mixer for a public safety radio transmitting antenna only a few feet away, on the same public safety vehicle.

15. Finally, as was the case for ERDS, the Safety Cast system raises Mexican and Canadian considerations if Safety Cast transmitters were to operate in the border areas. Even if the Commission decides it can address these problems by establishing a keep-away zone within a specified distance of the Mexican or Canadian borders, how would this be enforced for the large number of mobile transmitters in public safety vehicles that Safety Cast envisions? Yet another “micro chip,” again linked to GPS, and with the keep-away zone boundary burned into read-only memory? SBE agrees with WMRA: such a system is not credible.

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### IV. Possible Unauthorized Marketing of a Radio Frequency Device or Possible Unlicensed Operation by Safety Cast

16. SBE questions whether Safety Cast has operated its system prior to the June 11, 2003, grant of WB9XTT experimental authorization, or has continued to operate its proposed system after the June 13, 2003, rescission of the WB9XTT experimental authorization, or is marketing an unapproved RF device, in light of the following news report from May 12, 2003, issue of *The Business Journal*<sup>4</sup>:

#### EXCLUSIVE REPORTS

##### Safety Cast signs deal

##### Devan Stuart

SOUTHSIDE -- Jacksonville's Safety Cast has signed its first distribution contract -- a three-year, \$3.3 million deal -- with Miami-based Ander Police Supply.

Safety Cast makes radio transmitters that can be installed in emergency vehicles, railroad locomotives and school buses. The devices transmit an alert tone and a verbal message over all AM and FM radio frequencies warning motorists that an emergency vehicle is nearby.

Ander, a leading distributor of public safety products in South Florida and South America, agreed to buy at least 3,000 of Safety Cast's devices at \$1,100 each.

"This is an exciting piece of technology," said Ander Police Supply President Andres Dielingen. "Each time I speak of it, we generate a great deal of enthusiasm and interest."

Safety Cast officials are trying to drum up more business through meetings with a variety of possible interested parties, including the U.S. Air Force, and in demonstrations, including the International Association of Chiefs of Police conference in Louisville, Ky.

"Hopefully, we'll have a thriving enterprise here in Jacksonville in the not-too-distant future," said Safety Cast CEO Mark Foss, who projects \$70 million in annual revenues in five years.

Foss' big regret is that his company's technology wasn't up and running six months ago to aid in the war on Iraq.

"It wasn't ready because we didn't have the funding sources," Foss said. "Everything accelerates when you have a little extra fuel in the tank."

That extra fuel recently came by way of Jacksonville's Inman Co., an Ortega investment firm that landed financial commitments needed to move Safety Cast into the testing and production phase.

Safety Cast also aims to penetrate foreign markets. With a simple chip exchange, the technology can be switched to any language, an important selling point for Ander's South American markets.

*Devan Stuart covers economic development, legal, international and sports business. Reach her at 265-2220.*

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<sup>4</sup> See <http://jacksonville.bizjournals.com/jacksonville/stories/2003/05/12/story5.html>.

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SBE requests that the Commission investigate this report, and ascertain if either Safety Cast, or Anders Police Supply, have used, or is using and/or marketing, the Safety Cast system in violation of Sections 2.803 and/or 5.53(a) of FCC Rules and Regulations. Further, SBE asks the Commission to investigate whether Safety Cast is making commercial rather than experimental use of its system.

17. SBE notes that Safety Cast is also marketing its system to trains and school buses. This starts a slippery slope– who is to decide what other applications of the Safety Cast system are “more important” than FM and AM broadcasts? The nature of marketing pushes for expanding the marketplace for a product. SBE is not surprised to already see the marketing of this device expanding from emergency vehicles, to trains and school buses. City buses are a logical next step; how about ice cream trucks, finally making the FM broadcast band useless for its original purpose?



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### **V. Summary**

18. SBE believes that the WMRA Informal Objection got it right when it concluded “The entire premise of the Safety Cast system is a terrible mistake and the FCC should not burden broadcasters with this intrusive experiment.” It is a lovely idea, in a vacuum. It is a terrible idea, in reality. It is a bad idea made worse by a lack of research into the FCC Rules and practical application. SBE does not want to see its members, many of whom work at radio stations, having to explain to their employer how the FCC let this happen, much less wanting them to be tasked to track down the harmful interference SBE believes would be created if the Safety Cast system were deployed nationwide.

Respectfully submitted,

Society of Broadcast Engineers, Inc.

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