Before the
Federal Communications Commission
Washington DC 20554

In the Matter of	)	
	)	
Amendment of Part 15 of the Commission's Rules To Establish Regulations for Tank Level Probing Radars in the Frequency Band 77-81 GHz	)	ET Docket No. 10-23
	)	
and	)	
	)	
Amendment of Part 15 of the Commission's Rules To Establish Regulations for Level Probing Radars and Tank Level Probing Radars in the Frequency Bands 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz	)	

Comments of the Measurement, Control & Automation Association

The Measurement, Control & Automation Association (MCAA) files these comments in response to the Commission's Further Notice of Proposed Rulemaking in the above-captioned docket.[1]

A. About MCAA

MCAA is the national trade association representing leading manufacturers and distributors of instrumentation, systems, and software used in industrial process control and factory automation around the world. Members include the leading multi-national companies, together with a range of niche-oriented providers.

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[1] *Tank Level Probing Radars in the Frequency Band 77-81 GHz*, ET Docket No. 10-23, Further Notice of Proposed Rule Making, FCC 12-34 (released M arch 27, 2012) (*Further Notice*).

The association was founded in the 1940s as Recorder-Controller, Inc. and subsequently became associated with the Scientific Apparatus Makers Association (also known as the SAMA Group of Associations). MCAA was incorporated under its current name in 1994.

A list of members appears in Appendix A.

B. CONFORMITY WITH ETSI STANDARDS

MCAA commends the Commission for using the ETSI LPR standards as a starting point for U.S. regulation. Conformity between U.S. and European standards brings two benefits: U.S. LPR users can obtain compliant equipment at costs that reflect large-scale manufacturing for global markets; and U.S. manufacturers can boost exports while still supplying the U.S. market.

C. ANTENNA BEAMWIDTH FOR IN-TANK LPRS

We agree with the Commission that rules for in-tank and outdoor LPRs should be as similar as possible.[2] In one respect, however, we think they must differ. The proposed rules set out the same antenna beamwidth limitations for both categories of device.[3] We ask that the Commission adopt these proposed limits for outdoor LPRs, but leave the beamwidth unregulated for in-tank LPRs.

Many tanks come with an opening for an LPR antenna, but the opening is often too small to accommodate an antenna big enough to meet the proposed specifications. To enlarge the opening in a finished tank would be prohibitively expensive, when it is possible at all. Relaxing the beamwidth would allow the installation of antennas in unmodified tanks.

The proposed relaxation of the antenna beamwidth requirements would apply only to tanks made of metal or concrete, and which thus provide enough attenuation to essentially

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[2] *Further Notice* at ¶ 28.

[3] *Further Notice* at ¶ 29.

eliminate effects of the beamwidth exterior to the tank. We note also that LPR manufacturers have every incentive to minimize the beamwidth, given a particular size of opening, because a narrower beamwidth minimizes inaccuracies due to stray reflections from tank walls and internal structures such as pipes and pumps, and thus improves performance.

D. CONTINUED APPLICABILITY OF SECTION 15.209

The *Further Notice* proposes to allow the continued authorization of in-tank LPRs under Section 15.209.[4] The MCAA asks the Commission in the strongest terms to retain Section 15.209 as an option. Without that option, the limited available bandwidth in the 6 GHz band would severely limit achievable precision. Fortunately the demand for precision is somewhat lower in outdoor applications, where the 5.925-7.250 GHz bandwidth will suffice. Within tanks, however, where precision must be higher, the industry must be able to exceed 5.925-7.250 GHz, as it does now under Section 15.209. The proposed bandwidth at 6 GHz is acceptable to MCAA only if Section 15.209 certification on in-tank units remains available.

E. PROTECTION FOR RADIO ASTRONOMY

The MCAA respects the important work of the radio astronomy community, and will not object to certain measures intended to protect radio astronomy facilities from harmful interference.

First, MCAA will not oppose a provision that prevents the installation of LPRs within 4 km of the following sites:[5]

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[4] *Further Notice* at ¶ 15 n.36.

[5] MCAA arrived at the list of sites in consultation with Dr. Harvey S. Liszt of the National Radio Astronomy Observatory.

Site	N. lat.	W. long.	Site	N. lat.	W. long.
National Radio Astronomy Observatory (NRAO), Robert C. Byrd Telescope, Green Bank, WV	38° 25' 59"	79° 50' 23"	VLBA Brewster,WA	48° 07' 52"	119° 41' 00"
NRAO, Very Large Array, Socorro, NM	34° 04' 44"	107° 37' 06"	VLBA Fort Davis,TX	30° 38' 06"	103° 56' 41"
University of Arizona 12-m Telescope, Kitt Peak, AZ (note A)	31° 57' 12"	111° 36' 53"	VLBA Hancock, NH	42° 56' 01"	71° 59' 12"
Caltech Telescope, Owens Valley, CA	37° 13' 54"	118° 17' 36"	VLBA Kitt Peak, AZ	31° 57' 23"	111° 36' 45"
Haystack Observatory, Westford, MA (note A)	42° 37' 24"	71° 29' 18"	VLBA Los Alamos, NM	35° 46' 30"	106° 14' 44"
James Clerk Maxwell Telescope, Mauna Kea, HI (note A)	19° 49' 33"	155° 28' 47"	VLBA Mauna Kea, HI	19° 48' 05"	155° 27' 20"
Combined Array for Research in Millimeter-wave Astronomy (CARMA), CA	37° 16' 43"	118° 08' 32"	VLBA North Liberty, IA	41° 46' 17"	91° 34' 27"
Allen Telescope Array, Hat Creek, CA (note B)	40°49′04″	121°28′24″	VLBA Owens Valley, CA	37° 13' 54"	118° 16' 37"
Arecibo Observatory, Arecibo, PR (note B)	18°20′46″	066°45′11”	VLBA Pie Town, NM	34° 18' 04"	108° 07' 09"
Note A: Protection only in the 75-85 GHz band. Note B: Protection only in the 6 GHz band.			VLBA Saint Croix, VI	17° 45' 24"	64° 35' 01"

Second, MCAA will not oppose a provision that limits the height of an LPR to 15 meters above local ground level within 40 km of the above sites.

Third, as additional protection to radio astronomy reception, MCAA supports the proposals in the *Further Notice* to limit LPRs to fixed locations, to require downward-only installation, and to prohibit hand-held operation and sales to residential customers.[6]

MCAA will, however, oppose a provision that the industry must maintain a database of installed locations. We are aware that the Commission required such a database as a condition of a waiver granted to MCAA members Ohmart/VEGA (now VEGA Americas, Inc.) and Siemens,

[6] *Further Notice* at ¶ 34.

after Ohmart/VEGA had suggested it.[7] Although maintaining such a database may be manageable for one or two companies, under the limited circumstances of a waiver, it is not feasible for the industry as a whole. Many installations are performed by third-party companies not affiliated with the manufacturers. Although the manufacturers can direct the installers to respect the conditions above, for protecting radio astronomy sites, the manufacturers have no reliable mechanism for obtaining location data on each installation, and so cannot commit to maintaining these data.[8] We suggest, moreover, that a database requirement may well be overkill. In light of the protections outlined above, and the inherently low emissions of LPRs outside the main antenna beam, the likelihood of actual harmful interference to a radio astronomy observation site should be extremely low.

CONLCUSION

The Commission should adopt its proposed rules, subject to the exceptions noted above.

Respectfully submitted,

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[7] *Regulations for Tank Level Probing Radars in the Frequency Band 77-81 GHz*, Notice of Proposed Rule Making and Order, 25 FCC Rcd 601 at ¶ 38 (2010).

[8] MCAA would object particularly to a provision that location data be made publicly available. The Commission declined to impose such a requirement even in the waiver context, recognizing that customer information is competitively sensitive. *Id*.

APPENDIX A – LIST OF MCAA MEMBERS

ABB Instrumentation Division
Acromag Inc.
Ametek Calibration Instruments
Ashcroft Inc.
Automation Products Group, Inc.
AW-Lake Company
Azbil North America, Inc.
Berthold Technologies
Branom Instrument Company
Bronkhorst USA Inc.
Brooks Instrument
Burkert Fluid Control Systems
Burns Engineering Inc.
Cameron Measurement Systems
CENTRO, Inc.
Compass Controls & Instrumentation Inc.
ControlAir Inc.
Cross Company
Daitron Inc.
Dave Ray & Associates
DocBoss
Dwyer Instruments Inc.
DynaTech Control Solutions
Emerson Process Management
Emerson Power & Water
Emerson Process Systems
Endress+Hauser, Inc.
Engineered Sales Co.
Extrel CMS
FasTest Inc.
Festo Corporation
Fisher Controls International LLC
Flowmaster Inc
Fluid Components International
Fluid Flow Products Inc.
Forberg Scientific, Inc.
Gems Sensors & Controls
Georg Fischer Signet LLC
GF Piping Systems
Gilson Engineering Sales Inc.
Great Plains Industries Inc.
Hach Company
Ham-Let North America
Hawk Measurement
Heartland Controls
Hile Controls of Alabama
Hoffer Flow Controls, Inc.
Honeywell International
Instrumart
Instruments Direct
Invensys Operations Management
Ives Equipment Corporation
Kessler Ellis Products Co.
K-Patents Inc.
Krohne Inc.
Lesman Instrument Co.
Magnetrol International
Martel Electronics Corporation
McCrometer, Inc.
Meriam Process Technologies
Metso Automation
Micro Motion Inc.
Mid-West Instrument
Miller Energy, Inc.
Miller Mechanical Specialties Inc.
Monitor Technologies, LLC
Moore Industries-International, Inc.
Mueller Sales Corp.
Palmer Wahl Instrumentation Group
Pepperl + Fuchs Inc.
Petro-Chem Equipment
Phoenix Contact Inc.
PR Electronics
Precision Digital Corporation
Precision Fitting & Gauge Company
Process Controls Corp.
ProComSol, Ltd.
Pyragon, Inc.
Pyromation Inc.
R. Stahl Inc.
Racine Federated
Red Lion Controls
Regal-Brown, Inc.
Reotemp Instruments
Ritec Enterprises Incorporated
RJ Global WIKA, LLC
Robert S. Hudgins Company
Rockwell Automation
Rosemount Analytical Liquid Division
Rosemount Flow Division
Rosemount Measurement
Rosemount, Inc.
Rust Automation & Controls Inc.
Schneider Electric, Telemetry & Remote SCADA Solutions
Siemens Industry Inc.
Sierra Instruments, Inc.
Sierra Monitor Corporation
Smart Sensors Inc.
SOR, Inc.
SpectraSensors Inc.
Spirax Sarco Inc.
Sterling Engineering Solutions
StoneL
TALON Technical Sales
Teledyne Hastings Instruments
Tel-Tru Manufacturing Company
Thompson Equipment Company, Inc.
Thuemling Instrument Group Inc.
Transcat
Ultra Electronics, Nuclear Sensors & Process Instrumentation
UWT Level Controls LLC
VEGA Americas, Inc.
Venture Measurement Company LLC
V-F Controls, Inc.
VorTek Instruments
WIKA Instrument Corporation
Wilson-Mohr Inc.

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