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August 17, 2017

TO: Jean Kiddo, Chair  
FCC Incentive Auction Task Force

Michelle Carey  
Chief of the Media Bureau

RE: Response To The Ex Parte Filing By Kalpak Gude  
President, Dynamic Spectrum Alliance (DSA)

**Mr. Gude, President of the Dynamic Spectrum Alliance (DSA), recently filed an ex parte of his meeting with you both, and twelve additional FCC professional staff. I believe it is important to directly respond to his comments via this letter.**

**Mr. Gude states that,**

“...there is a critical need for having at least three channels per market for TVWS.”

**His statement can be separated into three distinct areas:**

1. Critical Need
2. Three Channels
3. Per Market

**Mr. Gude first states that there is a “critical need” for what his organization wants, free spectrum usage, ie, unlicensed spectrum everywhere in the USA. Mr. Gude then asks for “three channels”, meaning I think, three, 6 MHz UHF channels. This would come to 18 MHz of UHF spectrum.**

**If this is so, then what Mr. Gude is saying is that, even though the unlicensed advocates obtained 17 MHz nationwide, as part of the 84 MHz band plan (about 5.8% of total), they need one more MHz of spectrum, to get the full 18 MHz. And**

that securing 17 of 18 MHz, some 94.4% of their spectrum need is not enough. (11 MHz in the duplex gap, and 6 MHz from channel 37).

**Or does Mr. Gude mean TVWS needs three new 6 MHz channels beyond the 11 MHz which was secured in the auction?** This is difficult to understand, but let's just assume he means one new 6 MHz allocation to cover the 1 MHz he/they did not obtain.

**Mr. Gude then goes on to state that this new channel(s) is needed,**


“...to ensure availability everywhere.”

**Now does he mean all 9.8 million sq km of the USA?** Probably, I would think, that would make sense. But he also then goes on to say that these channels are meant to,

“...incentivize investment both by chip manufacturers and service providers, in TVWS technology.”

**Well ok, I get that, he needs to give some sort of market signal to a company to spend money because they now will have free usage of a national band of spectrum.** So we can further deduce that without this free spectrum, these companies will not invest. I get that.


**But what I do not get is the fact that Mr. Gude's organization has as its' Charter Members some of the largest internet companies in the world with combined annual revenues of \$200 billion.** Surely these Charter members can stimulate a order or two to send a market signal of a few tens of millions.

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**Adaptrum**  
Board Director  
Haiyun Tang  
A Silicon Valley-based company developing dynamic spectrum access technologies to enable new, unlicensed, multi-use networks to meet the growing wireless broadband demand.  
[Website](#)



**Facebook**  
Board Director  
Chris Weasley  
Founded in 2004, Facebook's mission is to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them.  
[Website](#)



**Google**  
Board Director  
Rick Whitt  
Google is a global technology leader focused on improving the ways people connect with information. Google's innovations in web search and advertising have made its website a top Internet property and its brand one of the most recognized in the world.  
[Website](#)



**Microsoft**  
Board Director  
Paul Garnett  
Founded in 1975, Microsoft is the worldwide leader in software, services, and solutions that help people and businesses realize their full potential.  
[Website](#)

**And as many others including ourselves have noted, is that these companies had full opportunity to participate in the incentive auction, and actually held up the process for an additional year of rulemaking around the 144 MHz band plan.** Then none of them bid in the auction, which many think greatly depressed the outcome.

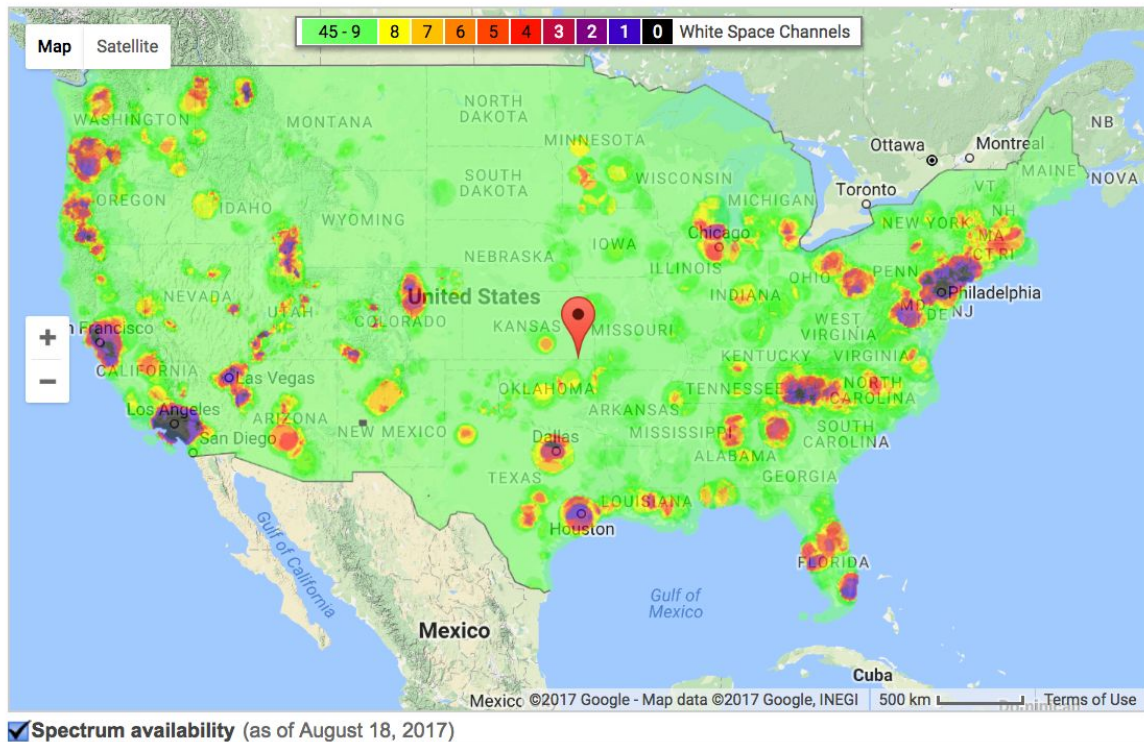
**If DSA members had put any “corporate development” effort into the process, they could have outbid others for uplink block G, and downlink block A, which would be on both sides of the existing duplex gap.** And they could have done this all across the country, adding 10 MHz to their already obtained 11 MHz, yielding 21 MHz of spectrum. But no, the corporate parts of these huge companies went with the wet dreams of their communications counsel, free spectrum.

**Instead, these Charter Members of the Dynamic Spectrum Alliance chose instead to not participate in the auction, and were counting on a Democratic candidate win** in the Presidential election, in order for the pending Vacant Channel NPRM to be passed by a well cultivated and friendly FCC majority. And they did not hedge their bet in any way.

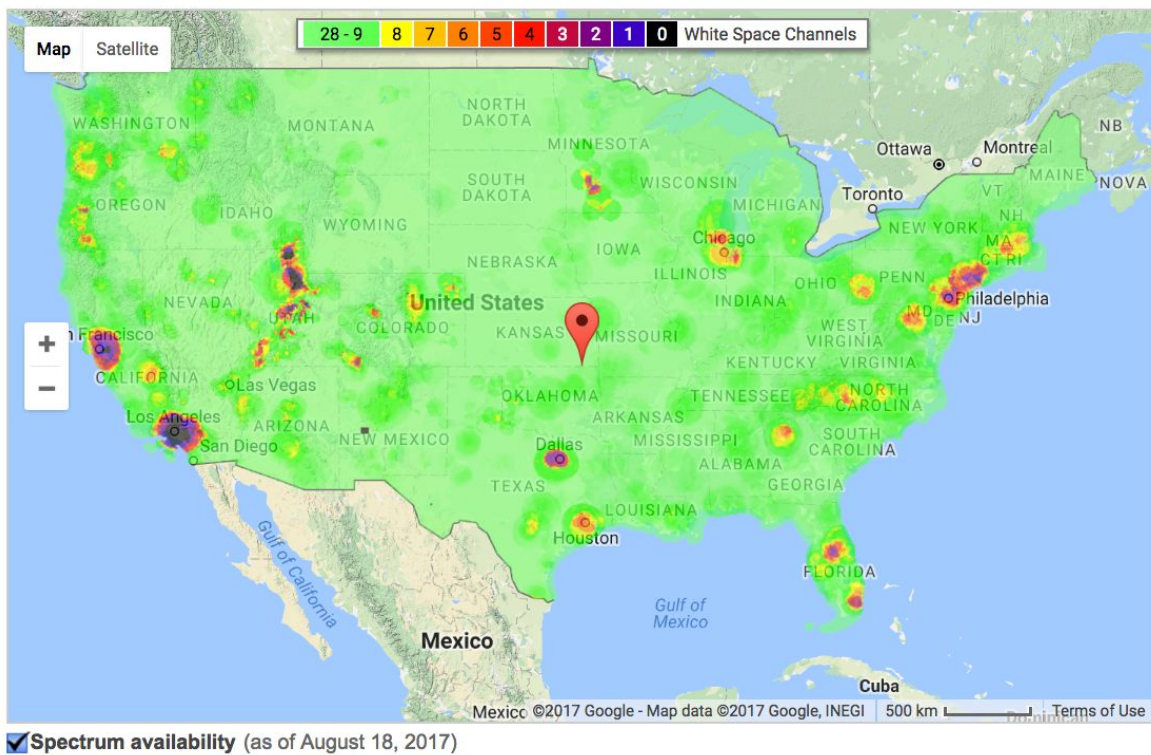
**Had DSA Charter Members bought uplink block G and downlink block A, and had the Democratic candidate won, and the vacant channel order be adopted,** then they could have sold the blocks for a tidy profit, and used that for the investment into the devices. Nope, they wanted a free lunch, and they did not want to send such a signal to Wall Street, the mobile carriers, or the Valley. So now they plan on trying one last time to interject into the LPTV Special Displacement Window a new set of criteria.

**Mr. Gude goes on to highlight that although identifying a vacant channel was only possibly an issue in a few urban markets,** he never provides that data for the record. And this is where his and DSA’s argument for the channel(s) falls apart the most.

Below are maps from Dynamic Spectrum Alliance member Google, and their spectrum database (<https://www.google.com/get/spectrumdatabase/channel/>):

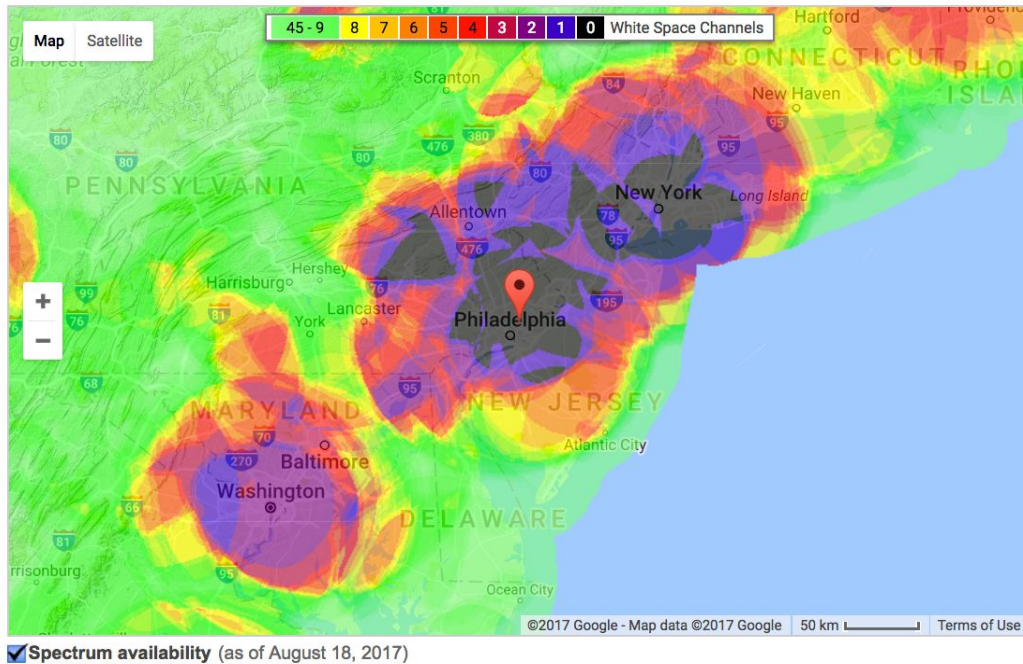


NATIONAL MAP OF AVAILABLE "FIXED USE DEVICE" LOW BAND CHANNELS - GOOGLE

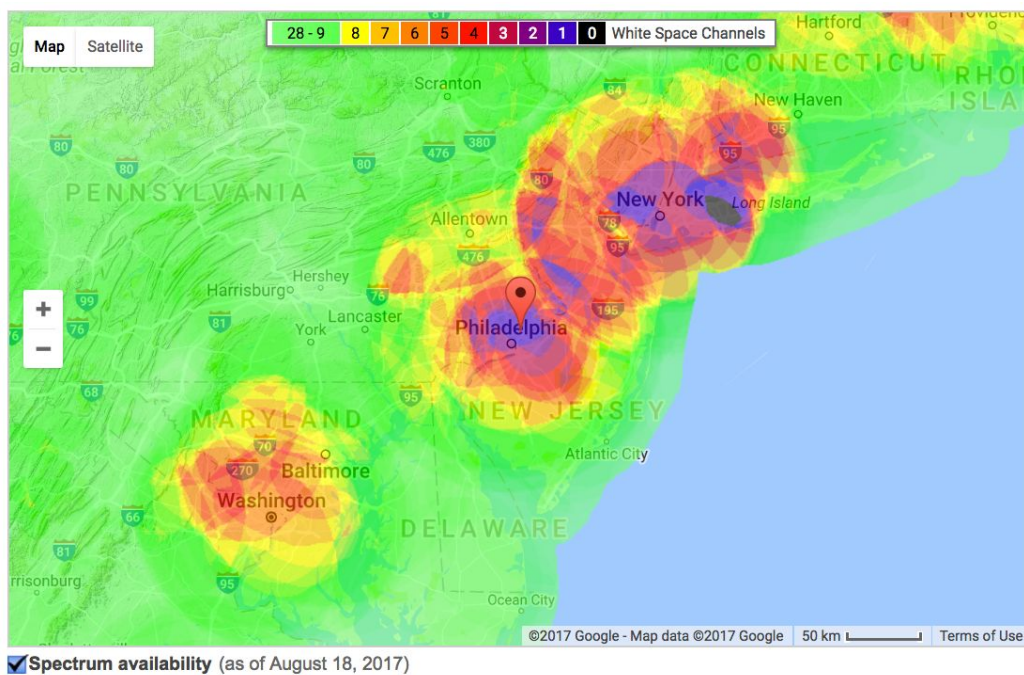


NATIONAL MAP OF AVAILABLE "PORTABLE USE DEVICE" LOW BAND CHANNELS - GOOGLE





CLOSE-UP REGIONAL MAP OF AVAILABLE "FIXED USE DEVICE" LOW BAND CHANNELS - GOOGLE



CLOSE-UP REGIONAL MAP OF AVAILABLE "PORTABLE DEVICE" LOW BAND CHANNELS - GOOGLE

The green areas have plenty of spectrum available for TVWS, and these are areas which they can (and could have for a decade now) deploy without any problem at all. But the darker areas are where spectrum could be a lot harder to opportunistically use, and can not be counted on. They also happen to be the major urban areas where 80% of the population live.

According to the 2010 US Census, rural areas cover 97 percent of the nation's land area but contain 19.3 percent of the population (about 60 million people).

**The major falacy with Mr. Gude's and the DSA's focus on rural areas, is that they are using the rural broadband gap as the reason to justify the urban spectrum grab without paying nor investing into it.** If the DSA members are wanting to use this free spectrum, and they say it is for the good of the country, then they should be offering substantial public services attached to it. It only makes sense that if the new spectrum uses are so valuable to society, then public obligations in trade for a subsidiary and corporate welfare need to be made.

**However, if the DSA members are requesting public resources so that the computing (ie, cloud) services, devices, and commerce utilizing and depending on that public resource can have it free. So what is the trade with the government for that?** The mere hope and blue sky projection that an industry will grow around it does not make sense at all. The mobile carriers, the rural and indie telco's, the MVPD, and the WISPs are all operating businesses right here in the US already doing that. Do the DSA members have anything to offer the public in terms of "public service obligations" other than to let their businesses grow with unbound capitalism and nothing but promises of a huge economic boom to investors and nothing to the public?

**The spectrum which DSA is requesting free access to already has significant public service obigations attached to it.** In the incentive auction the mobile carriers were freed from these obligations, and with their own 911 and alerts modernization will provide that as a public service, and they paid for the use of the spectrum. DSA offers neither in return.

**A proper FCC economic cost/benefit analysis should be done prior to any new rulemaking being adopted.** Subject the current vacant order NPRM to that standard and let's see what it could mean. In addition, DSA should provide their own economic cost/benefit analysis and not just industry prognostications.

**The burden is on DSA first, and then the FCC to study this, well before even elevating this issue for circulation with the Commissioners.** Mr. Gude then goes on to say that by not creating this free spectrum allocation:

"...the impact would be on the entire TVWS ecosystem."

**Well yes, this is true.** If you do not solve for the dark areas of the map, the green areas can not get the devices they need because the manufacturers do not see a big

enough market to make the investment, even though the few \$10's of millions it would take to place the orders will not be invested into by the members of the Alliance.

**Mr. Gude then says that,**

“A balancing test merely between a single LPTV station in one market versus TVWS availability in that market would be a mistake as the lack of TVWS channels everywhere would negatively impact the availability of TVWS everywhere.”

**This reasoning by Mr. Gude and the DSA quickly falls apart in that, the lack of channels in urban markets does not affect the availability in rural areas, where multiple channels have been available now for years.** The actual reason was stated recently in Microsoft's 52-pg rural broadband strategy paper, in that, TVWS devices are best deployed in a “mixed” technology fashion, and in one which there is little choice except satellite to receive a signal.

**The dense urban cores have plenty of licensed spectrum opportunities, and all of the new services which can be used on them. And all of the mobile carriers have IoT plans.** The real problem is that the Tech Co do not want to have to rely on or pay the mobile carriers, nor the MVPD, nor in the future the nextgen broadcasters for carriage. They simply want it for free. And they do this while sheltering \$100s of billions out of the country from taxes. Now they are trying to use the rural digital divide as their shield and proxy, when what they really want is the free urban spectrum worth billions and billions, and get it without any public obligations.

**To help illustrate this, if the incentive auction forward pricing was about \$19.5 billion, and 13 national UHF channels were sold (I know, but you transpose to 5 MHz blocks if you want), it can then be said quite accurately that each 6 MHz UHF channel sold for about \$1.5 billion.** So DSA wants at least an additional \$1.5 billion subsidy and no public service obligations, or it wants 3x \$1.5 billion, or an additional \$4.5 billion in corporate welfare. And of course they already got 17 MHz to use.

**Mr. Gude and the Dynamic Spectrum Alliance make a classic mistake by those which are not familiar with the TV band, that one LPTV can cover the entire “market”.** They do not seem to understand that the most powerful of LPTV will only cover at best about 75% of the TV DMA, or less. If we follow Mr. Gude's reasoning, that only one LPTV per market would be affected, and in only a limited few urban markets, then this should be enough of a “balancing test” to warrant he and his mega-huge members to be awarded access to the spectrum for free.

**What Mr. Gude does not seem to understand is that the practice of “geo-sharing” a TV channel is common across the 210 TV DMA’s.** And that on UHF channel X in this market might be 3 LPTV geographically spread out, but all using channel X. Which means Mr. Gude’s 210 TV market channel taking(s) does not mean 210 less LPTV channel availabilities to repack into. No it could mean more than 600-800 less channels.

**DSA is doing the asking, they need to provide the economic cost/benefits.**

**Our Coalition has previously provided data to show that as many as 25% of all channel assignments are “geo-shared”, and especially within the top 25 markets where 50% of LPTV served populations reside.** What Mr. Gude needs to understand is that the vacant channel rulemaking is not based on the 210 TV markets, nor the 416 PEA’s used in the auction, and the standard for displacement clearings in the repack, but that it is based on 2 km squares, some 9.834 million of them across the country.

**Both Mr. Gude and the FCC bureaus have not provided the Commissioners nor our industry, nor have submitted into any proceedings, the true displacement impacts from the implementation of the vacant channel process and their 2 km square showings.** Do not the DSA members have the computing power and resources to do a full analysis?

**One would think that the Dynamic Spectrum Alliance could meaningfully contribute to this debate with a post-auction 2 km square impact analysis of how THEIR proposal would affect LPTV channel availabilities if implemented.** But this must also be too hard for the managers, who manage the geeks, who in turn manage the nerds, who will build the model to get the analysis done for the bean counters, who in turn hire the communications counsel, which in turn will not provide the data needed, because this is all a smoke and mirrors game.

**Will not someone over at DSA please run the impact analysis of what they are proposing?** And do it for the entire 9.834 sq km the USA has. Without this analysis, DSA is not serious about their proposal. And they continue to waste all of our time and resources.

**The single interesting point Mr. Gude does make, albeit too late to be considered for the already happening repack and transition process, is that of a “neighborhood” for LPTV and translator spectrum, specifically within rural areas.** This is a point which our Coalition made a few years back when all of the repacking rules were being adopted, and had it been implemented, and the Dems won, and.....



**To this point, Mr. Gude states:**

“...so as to enable the most efficient use of the remaining spectrum for TVWS services as aggregation of channels can be done effectively in adjacent spectrum and that this will enable much higher throughput to be achieved, providing significant benefits to rural residents as their Internet broadband speeds could then be similar to their urban counterparts; obviously a strong goal for the Commission.”

**Now this is a great point to attempt to make.** More channels taken equals more channels available, equals more spectrum, equals more capacity. Brilliant, and dynamic, yes, this Alliance is smart, it would seem. But what this shows is that the student is asleep in the back of the class, bored, and unwilling to learn and adapt.

**Mr. Gude and the DSA have forgotten that the repack and transition rulemaking is a settled issue, and is only going to be changed to help it achieve its objectives.**

They seem to be under the impression that they can still advocate for and expect to have their request granted when the LPTV channel availability public notice is issued approximately 60 days before the LPTV special filing window. How wrong they are. LPTV and translators are governed by the repack in that we are displaced by it. Change our repacking rules and you open up the entire primary repacking process to multiple relitigation actions with significant standing and cause.

**The introduction, at this late date, of any new constraints on the availability of channel assignments for LPTV can not be introduced into the process.** This is simply because with the new Phase Zero special filing process, in response to the T-Mobile early deployments have already begun. Temporary channels are already being filed for. And all over the country LPTV are already filing for minor modifications to avoid creating interference to moving primaries. The ship has sailed already on all of these issues.

**An additional issue which Mr. Gude forgets to mention is that any new rulemaking, including the revisiting of the vacant channel NPRM, under the new FCC management, needs to be subjected to a rigorous economic cost/benefit analysis.** And they are crazy to think that the vacant channel rulemaking would NOT be subjected to this test, as we and the primaries (I trust) would demand it. And again, DSA needs to first present their own national, all market, all PEA, all 9.834 million sq mile cost/benefit analysis well before the FCC should consider doing its' own.

**Mr. Gude and the DSA also fail to recognize that the TVWS rules and devices are “opportunistic” users of the people’s spectrum, as where it is available, and on very specific terms of use, and under very strict technical parameters.** LPTV and

translators are “licensed” services, with very specific obligations, and rights. And those rights are not be trivialised with so that some of the biggest companies in the known galaxy do not have to spend a few bucks to stimulate a market, or compete in an auction. This industry every hour or every day is providing local EAS and valuable diverse programming, employing people, and serving local needs.

**In the past three months our Coalition has promoted a truce to end this war, has had multiple meetings and briefings into how a free market solution could be crafted for the Tech Co and DSA members to secure spectrum for this purpose, and has met with the FCC to explore this solution.** Obviously this truce is being gamed to try one more time to get one or more national UHF channels for free.

**DSA may claim they have a right to the people’s spectrum.** While LPTV and translators are already are the permitted and licensed users, with substantial public service obligations. TVWS businesses do not have any public service obligations at all!

**Mr, Gude and the DSA do not seem to understand that as much as 59% of all of the spectrum sold in the incentive auction is coming from licenses and permits which LPTV and translators are currently using or permitted to use.** With the reverse auction totalling some \$10 billion this can mean that almost \$6 billion of value is being extracted from these LPTV and translator users. And that this spectrum is generating for the government over \$5 billion from the forward auction. Not to mention, but I will, the projected \$500 million in relocation costs our industry will incur, which has already started.

**So just what has the DSA done for America lately?** They helped to delay the auction for over a year in order to try to game the 144 MHz band plan, which by many accounts depressed the incentive auction by billions. The DSA and their Charter Members “owe” the people a lot of money, and should not be given any comfort or quarters in this matter. They got 17 of the 18 MHz they wanted. The spectrum is out there if they just go use it, opportunistically as the rules provide for.

**It is time for the DSA to walk its’ talk and provide the 2 km impact analysis for all 9.834 sq km in the USA, and to show how their proposal will affect LPTV and translators, licenses and permits.** Provide that to the FCC, and us, and maybe we have a starting point for discussion, but without it, stop blowing smoke up the FCC’s rulemaking process. Ask not what the country can do for DSA Charter Members, ask what they are willing to do for all of us, quantify it, and do the fraking cost/benefit analysis!

Respectfully submitted

Michael A. Gravino, Director, LPTV Spectrum Rights Coalition, LLC