

1     aside from legal reasons and Orbit Act, I think  
2     Congress understood that there are significant  
3     transactional costs that would be placed on  
4     international satellite systems that they were  
5     subject to auctions, either sequential or global.  
6     So there obviously have to be distinctions even  
7     among or within license blocks spectrum.

8             MR. STROH:    As strongly as I am an  
9     advocate of the smart radios and flexible spectrum,  
10    I can't find it in myself, at least immediately,  
11    try to share public safety spectrum.  But I would  
12    support would be a grace period where say a period  
13    of 10 years where the public safety agencies would  
14    say that for 10 years the smart radios won't try  
15    and test your spectrum to see if it's in use, but  
16    after 10 years it will try listening.  They'll have  
17    plenty of notice for that.

18            What I suspect is going to happen  
19    though is that those public safety agencies that  
20    feel like they have a 10-year grace period are  
21    going to find out that the services that are going  
22    to evolve in the nonprotected spectrum, the license  
23    exempt spectrum, are going to become so desirable  
24    that they're going to want to migrate out of their  
25    license spectrum to take advantage of all of what

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1 is happening. An example of this is the San Diego  
2 Country Sheriff's Department which is doing a  
3 mobile intranet, running at one megabit per second  
4 into each of their 650 vehicles using the 2.4  
5 gigahertz band to be able to do computer updates  
6 and dump data right down to their hard drives which  
7 are in the trunk of the car to be carrying the  
8 database around instead of trying to query it in  
9 real time for 650 vehicles.

10 The other thing I think is if you build  
11 a network of smart radios, it's also possible to  
12 build a preemption mechanism where basically the  
13 public safety guys start transmitting a beacon when  
14 they need more spectrum in a wide scale emergency  
15 and all of a sudden the smart radios vacate. They  
16 shut down. If you're not a priority use, you're  
17 not out of here. You just don't operate. The  
18 smart radios can do that.

19 MR. KURTIS: I just don't think that we  
20 need to open up 100 percent of the spectrum for the  
21 unlicensed use. I think that you have certainly  
22 the ability to use spectrum where it is fallow.  
23 You make a strong argument for being able to do  
24 that, but to say you've got 10 years, public  
25 safety, and then we're going to allow the

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1 unlicensed people who have spread throughout all  
2 the other spectrum to spread into yours as well. I  
3 don't think we need to get to that point.

4 MR. FURTH: But if it's fallow?

5 MR. KURTIS: I'm sorry?

6 MR. FURTH: If it's not in use.

7 MR. KURTIS: Well, if it's not in use  
8 at the moment that that device goes to turn on is a  
9 different question than if it's not in use because  
10 there's nobody licensed in that area.

11 And while that unit can sniff before it  
12 starts using a particular frequency, the public  
13 service radio may not have anywhere else to go to  
14 when it needs to communicate or may not have the  
15 same sniffing capability.

16 I'm also concerned that you have the  
17 same dichotomy here that you have in the CMRS.  
18 There's a very large difference between the ability  
19 of a city to come up with resources for spectrum  
20 management costs versus a county. There's a big  
21 difference between a rural county and an urban  
22 county and there's a big difference between a  
23 county and a state. And I think that we have to be  
24 careful that if we're going to go to some type of a  
25 regime, to remember number one that any fees that

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1 we impose on the public safety is really coming  
2 from the taxpayer. So we're essentially levying a  
3 federal tax to require the local jurisdiction to  
4 raise tax revenues to pay the federal tax and I  
5 think that the discussions that we have in terms of  
6 spectrum and the ability of licensed and  
7 unlicensed, I think that we do have to carve out a  
8 piece of spectrum for public safety that has the  
9 ability within it to be able to meet the needs of  
10 the city policy, the county, the state, right  
11 across the board.

12 MR. FURTH: I see your hands. I want  
13 to actually just ask a couple more questions before  
14 we get to the audience again.

15 I guess I would I would like, following  
16 up on Michael's comments, also broaden the  
17 discussion to talk about the rural issue because  
18 that is another example where it seems in the  
19 comments and in some of the discussion we've had  
20 here, there is this notion that somehow the models  
21 that we're looking at, the way they are currently  
22 configured don't necessarily fit, at least some  
23 would argue, when you're talking about rural  
24 issues.

25 My observation is that as far as I

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1 know, other than sometimes in the way in which we  
2 license spectrum that we carve out licensing areas  
3 that are -- RSAs, that are defined through census  
4 data as encompassing rural areas. In general, our  
5 rules both on the unlicensed side and the licensed  
6 side, don't distinguish between different  
7 geographic areas in the country based on density of  
8 population and I guess my question would be is that  
9 something when you say one size doesn't fit all, is  
10 that something that you would advocate that there  
11 should be, in fact, be different rules, different  
12 standards and I'd like to throw that open to the  
13 panel as well.

14 MR. KURTIS: Yes.

15 MR. FURTH: But what? I mean you need  
16 to give us details. What rules should be  
17 different.

18 MR. KURTIS: Well, if we're looking at  
19 interference issues, again, you have to realize  
20 that one size does not fit all. If you have a  
21 maximum power that you are going to allow from a  
22 broadcast station, it's one thing to limit the  
23 power in an urban environment when a certain power  
24 level is going to give me access to hundreds of  
25 thousands of potential viewers in a broadcast

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1 application versus in a rural area where I may have  
2 to have 30 times the power or 20 times the height  
3 to get anywhere near a footprint that is nowhere  
4 large in comparison to that population base. You  
5 just have a very different model. You have --  
6 you've heard talk, I don't know if it's precisely  
7 exact, but like 90 percent of the population live  
8 in 10 percent of the geography and you have very  
9 different needs and very different cost bases.  
10 Classic example is the universal service. You  
11 would not have rural telephone service. You would  
12 not have rural electrification if it were not the  
13 ability to get the high cost areas subsidized by  
14 some of the areas where it is significantly lower  
15 cost and does that fit the marketplace? No. The  
16 marketplace would say don't let the rural people  
17 get telephones. Let's just have everybody go to  
18 the urban area to get it and I don't think that  
19 there are -- there is a situation where we want to  
20 come up with a business case that works in only a  
21 large urban application.

22 MR. FURTH: One thing, thankfully, that  
23 is beyond the scope of the spectrum task force is  
24 universal service, but I guess I would like to ask  
25 others on the panel if they feel that in terms of

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1 our spectrum based rules there should be  
2 distinctions made between urban and rural areas as  
3 Michael suggests.

4 MR. STROH: Yes. Yes, there should be,  
5 but those rules whether the operation, how the  
6 operation varies from urban to rural ought to be  
7 imbedded in the radio and let the radio decide when  
8 it applies that rate, when it applies which rule.  
9 If it, for example, if it senses, the radio is able  
10 to hear a very dense RF environment, it is  
11 programmed to back down in its power and spread  
12 out, go to more of a spread spectrum or ultra-wide  
13 band model.

14 If it's in a rural area, and it doesn't  
15 hear a lot of other traffic, it can take a guess  
16 that it is okay to transmit higher power, narrower  
17 bandwidth and then to punch through for much  
18 greater distances.

19 We have the ability for the radios to  
20 make those decisions now without trying to  
21 micromanage what will work in Iowa or Nome, Alaska  
22 from Washington, D.C.

23 MR. FURTH: I guess my question is  
24 whether you need an FCC rule to make that happen or  
25 whether that's again a matter of protocols that can

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1 be worked out by industry and in the marketplace.

2 MR. STROH: Yes, because it's not --  
3 right now it's not legal for those radios to even  
4 have the option of other higher power.

5 MR. MILLER: I suspect you're speaking  
6 of your internet type devices and things. I'm more  
7 familiar with traditional land mobile. And the FCC  
8 realizing that spectrum is finite, many years ago  
9 imposed what they called the safe harbor  
10 limitations and so what happens with that is -- and  
11 since I do frequency coordination there are  
12 counties in Utah that are 20 miles wide and maybe  
13 90 miles long and so -- and the mountains are  
14 10,000 feet high with an AAT of a couple thousand  
15 meters or whatever. So according to the safe  
16 harbor rule, you can have a couple of picowatts  
17 from that transmitter site, but the Commission does  
18 allow you to ask for a waiver of that rule. So I  
19 think the Commission's rules, quite frankly,  
20 recognize that there is a difference and sometimes  
21 you have to do a little bit of work to show them  
22 that hey this is a rule site and this is why we  
23 need this justification.

24 I don't recall any instances of getting  
25 a rejection whenever I furnish the proper

1 documentation.

2 DR. HAZLETT: Yes, I'll take the other  
3 side of this one. No, the rules should be generic.

4 If your rules are generic and they're screwing up  
5 allocations in rural versus urban markets, for  
6 example, then your rules are too rigid. Have  
7 flexibility in the regime so that yeah, the markets  
8 are going to provide, if there's any rationality or  
9 efficiency of this, they're going to provide a lot  
10 different mix of products with a lot different  
11 technologies and maybe analog cellular is fine in  
12 Butte, Montana and digital cellular is fine in  
13 Chicago, Illinois, but the rules to impose analog  
14 and then to keep analog and then to allow digital  
15 and then to allow digital all, those rules, that's  
16 the rigidity that has messed up the market, not the  
17 one size fits all per se in terms of the regime,  
18 but the FCC should not try to micro manage. If it  
19 does that, of course, every market is different and  
20 blah, blah, blah. That's why you want to make sure  
21 your rules allow that flexibility, the diversity to  
22 spring up spontaneously from the heterogeneity of  
23 the markets.

24 MR. WYE: I'll take a whack, too. It  
25 seems to me one of this is one of those theoretical

1 practical issues. Theoretically, I can see why you  
2 might need different scenarios, rules, whatever in  
3 urban versus rural. That makes sense to me. My  
4 practical side says okay, well, how do you  
5 implement that? And we heard one example of that  
6 although I must say it sent a shiver down my spine  
7 when Mr. Stroh said that the radio can take a guess  
8 as to how much power it could be using and that  
9 made me a little nervous.

10 And so when I think about well, how  
11 would you implement this or how would you define  
12 differences, I mean I guess you're going to run  
13 into a wrong word spectrum problem. As you move  
14 along the spectrum from urban to rural, where do  
15 you set the gradations? Where do you set the  
16 different limits? And okay, if I figure I can't do  
17 that and I envision here for folks who are  
18 familiar, driving up 270, you go from downtown  
19 Washington, obviously very urban, dense environment  
20 to Bethesda, probably not quite as dense, out to  
21 Germantown, again, probably not as dense again, but  
22 where do I set the limits? How am I drawing the  
23 lines on the map that says here I can do this and  
24 here I can do that? I think that would be an  
25 extremely difficult task for the Commission to

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1 undertake.

2           And I recognize that we have the RSAs  
3 versus the other and maybe that's the only way you  
4 can do it is a very gross level of truly rural  
5 versus truly urban, but then of course, you get  
6 into the problem of okay, what happens when the  
7 rural areas start building out. At that point, the  
8 FCC is going to start changing their rules and you  
9 have to start drawing the lines again. So again,  
10 the proctocolitis here scare me a little bit.

11           MR. FURTH: I'd like to ask if anybody  
12 in the audience wants to ask questions or make  
13 comments on this issue?

14           David?

15           DR. REED: David Reed, again. Sorry  
16 for taking so much of your time. It seems to me I  
17 actually more wanted to focus on public safety  
18 issues, but also this one which relates to it.  
19 We're acting as if the public safety systems are  
20 locked into a technological backwater and  
21 therefore, which to some extent from budgets is  
22 true, but not as true as you might think because  
23 costs of technology have been plummeting,  
24 especially digital technology so buying the next  
25 system is a lot cheaper than the system they

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1 already bought. That's one thing.

2 But I think the main thing to think  
3 about is that I've spoken to a lot of people that  
4 are operating public safety networks and they say  
5 the two biggest problems they have are one,  
6 interoperability and two, the inability to get any  
7 significant commercial investment because of the  
8 tiny size of their market in upgrading the  
9 capabilities of their equipment. So what's  
10 actually happened, alluded to in San Diego and a  
11 lot of other places is public safety activity has  
12 migrated on to the commercial services, you know,  
13 policemen use cell phones. People use 802.11 and  
14 so forth. And the market is moving that way  
15 anyway. It's just a lot better technology.

16 So if we pulled the plug and said over  
17 some period, I don't know whether over 5 years, 10  
18 years or 25 years is the right thing, we go away  
19 from dedicated services to letting the public  
20 safety use the same techniques, therefore have  
21 access to all the spectrum which would be much more  
22 efficiently managed and more dense, they'd have  
23 more capability, not less and we'd again develop a  
24 rich commercial marketplace that could satisfy  
25 their needs, public piggybacking on that. And I

1 think we make a serious error to assume that just  
2 because people are rural, they're poor, just  
3 because they're public safety, they're poor and  
4 that sort of thing. Because in fact, it is the  
5 case that ambulances get down highways, right? We  
6 didn't have to build an ambulance lane and put  
7 jersey barriers on it to guarantee that public  
8 safety works.

9 MR. FURTH: Yes.

10 AUDIENCE MEMBER: I've got a couple of  
11 comments that I wanted to make through analogy. We  
12 heard a lot of analogies here over the last few  
13 days and if sheep are bringing their own grass and  
14 the horse is out of the barn and the dog is eating  
15 my bundle of rights, and it strikes me that in the  
16 end the issue of public safety as with much of  
17 these other issues comes down to money. And the  
18 analogy I would start with is if I have some land  
19 who is better situated to lease that land for  
20 another user, if I'm not using it all. Would it  
21 better to have me have the ability to lease part of  
22 it to someone else and then coordinate directly  
23 with them through contract to say you can lease  
24 this land under the understanding that you don't  
25 have any parties at night or if you do, I get to

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1 come and if there are -- you can't have vehicles up  
2 on blocks, etcetera, and perhaps under that  
3 situation if I originally got land from the  
4 government, I would be obligated to share some of  
5 the revenue from the sublease with the government.

6 Or alternatively, would it make sense  
7 to have the government tell me that it has  
8 subleased part of my land and I now have to fight  
9 tooth and nail in front of the sublease regulatory  
10 agency to protect my rights and the claim that  
11 they're trying to do too many things and they say  
12 he's just afraid of the competition.

13 Extending this analogy to the public  
14 safety area, the public safety community has  
15 certain amount of spectrum allocated to it now.  
16 And one way to avoid the financial problems  
17 associated with simply mandating the stick of  
18 having them upgrade is telling them that this is  
19 their spectrum for the foreseeable future and they  
20 have two choices. They can either continue to use  
21 it inefficiently like they are. They could improve  
22 the technology that they apply in the spectrum,  
23 either to increase the robustness of it or they  
24 could increase the efficiency of their use of the  
25 technology such that they're only using half as

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1 much of the bandwidth and then allow them to go  
2 ahead and lease out the other half of it to AT&T  
3 who wants to have more bandwidth in the area.

4 This kind of approach strikes me as  
5 very sensible in concert with the larger theme of  
6 having good incentives and just one other example  
7 which I'd like to give is for how we would handle  
8 this in the area of developing technologies.  
9 Imagine that there's a new phone network, say  
10 probably invented by David that has no  
11 infrastructure. Instead, each phone uses wireless  
12 IP style network where each phone agrees to pass  
13 along the traffic from neighboring phones. So if  
14 you've got 500 people with these phones who go out  
15 to the middle of the countryside, all of a sudden  
16 there's a phone network there. To start off with,  
17 it is unlicensed and it is experimental. It is --  
18 it's growing and it's developing and after a while  
19 an industry builds and develops and consumers start  
20 to adopt it and they want protection. Well, at  
21 this point, it would seem like it would make sense  
22 to give these types of devices an area of  
23 protection, some place where they can be insulated  
24 from those types of devices that don't play smart,  
25 that aren't intelligent or adaptive and that could

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1 either be in a separate part of the unlicensed band  
2 or perhaps it develops sufficiently that it's time  
3 for it to have its own band. And then once again  
4 it's within the public safety area, once it has its  
5 own band if we adopt the regime of allowing it to  
6 choose how to use the spectrum that it has earned,  
7 it can either stagnate and choose to forego all for  
8 the subleasing it could do or it could improve its  
9 throughput and reduce the amount of spectrum that  
10 it needed and then sublease it to somebody else.

11 MR. FURTH: Thank you. I think we need  
12 to move on. We started late, so we're going to run  
13 a little bit late as well. We'll try to finish at  
14 maybe 3:30, 3:35 or so, but I did want to move on  
15 to the next and last set of discussion issues.

16 MS. FARQUHAR: Which is transition  
17 mechanisms. One important element that the  
18 government needs to consider because spectrum is  
19 already so incumbered is that if it wants to make  
20 way for new technologies and also adopt new  
21 spectrum models for rights and responsibilities, it  
22 needs to adopt transition mechanisms to be able to  
23 do that effectively.

24 In particular, the types of issues the  
25 FCC has had to contend with recently where it's had

1 to adopt these mechanisms have been making way for  
2 new technologies, dealing with market failures and  
3 also taking into account the international realm  
4 and the global telecommunications market that the  
5 carriers, in particular, live in.

6 In that vein, some of the mechanisms  
7 that the FCC has adopted already has been to  
8 greater expanded rights to incumbents, to reclaim  
9 or relocate spectrum and licensees already either  
10 through mandatory or voluntary means, overlay  
11 approaches and underlay approaches. What I'd like  
12 to get from the panel is a reaction to these  
13 techniques and models and also consider an approach  
14 that was raised this morning, both by Chairman  
15 Powell, as well as by Tom Krattenmaker in their  
16 remarks and that was should the FCC take more time  
17 in its initial allocations and assignment of  
18 spectrum to adopt self-correcting mechanisms in  
19 case of market failures, to think through what  
20 could happen, anticipate problems and adjust for  
21 those on the front end, rather than having to deal  
22 with them on the back end. So let me throw it open  
23 to some of the panelists on that question.

24 In particular, Jennifer, if you could  
25 address some of the international issues that I

1 know you in particular have had to deal with and  
2 David also.

3 MS. WARREN: You want me to start? I  
4 haven't had an opportunity to think about that.  
5 Obviously, in terms of an international  
6 perspective, but I want to come back to a domestic  
7 one, in terms of transitioning incumbents to other  
8 spectrum, I mean at least from the satellite  
9 perspective, there's been a great deal of effort to  
10 try to harmonize the use of bands globally, and to  
11 the extent that you relocate satellite incumbents  
12 in spectrum, domestically, that has ramifications,  
13 obviously, globally, to their ability to continue  
14 to provide service, assuming it's not to a band  
15 that falls within a certain range.

16 And if they haven't yet deployed, this  
17 has happened several times in the context of PCS  
18 and MSS, the U.S. does lose its credibility after  
19 it goes and achieves an international allocation,  
20 for example, let's say an MSS allocation. And goes  
21 and achieves it after a great deal of effort, comes  
22 back to the United States and instead of pursuing  
23 that, then decides to reallocate that allocation to  
24 PCS which clearly proved right, given the services  
25 here, but made the next time we went back for an

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1 international allocation, both for MSS and other  
2 services that we said needed to be harmonized and  
3 we needed the world to go with us, made it that  
4 much harder.

5 So there are those who think that  
6 domestic, the domestic allocation process is  
7 completely divorced from the international process  
8 or the international allocation process and it's  
9 not because it's important to manufacturers,  
10 whether satellite or wireless. It's important at  
11 least to satellite service providers because  
12 businesses are dependent upon a global business  
13 plan, not a national business plan as it more often  
14 the case for the domestic wireless carriers.

15 So there are distinct ramifications  
16 that need to be taken into account and I was very  
17 pleased to see that the task force actually had a  
18 section recognizing that there were issues there.

19 With respect to underlay, overlay,  
20 etcetera, domestically, I think licensed underlay  
21 approaches, as opposed to unlicensed is a very  
22 useful mechanism is parties are assured that it is  
23 noninterfering, as I think is a stipulation. But  
24 licensed, unlike unlicensed, at least allows you to  
25 go back to somebody who holds the license and is

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1 accountable. So that if there is interference  
2 despite demonstrations that perhaps there wouldn't  
3 be, there is a party to go to.

4 That's the fear with the unlicensed  
5 underlays and overlays and whatever category you  
6 want to call, is that in the case, where there are  
7 disputes about whether or not the parties can co-  
8 exist, there's no one to go back to. Recalls are  
9 very hard. OET managed to do a very important one  
10 lately, sort of analogous. But recalls are  
11 impossible, really. So what do you do if the  
12 Commission gets it wrong? That's why licensed, at  
13 least, allows you a party to go back to.

14 MR. WYE: Just to follow up on one  
15 thing that Jennifer said and I completely agree on  
16 one point. I will say that the underlay concept  
17 still makes me a little nervous, even if it's  
18 licensed because if we're still talking about  
19 ubiquitous devices that are mobile, unless those  
20 devices are uniquely identifiable somehow, in other  
21 words if -- I have to have a way to trace them back  
22 to the licensee. Just having it licensed in and of  
23 itself may not get me enough, so as long as I can  
24 trace that device back to the licensee, that may  
25 work.

1 MS. FARQUHAR: Let me ask, Tom, if you  
2 could also address whether the FCC can adequately  
3 anticipate market failure and whether it should  
4 address that on the front end?

5 DR. HAZLETT: No.

6 (Laughter.)

7 DR. HAZLETT: But it can certainly  
8 anticipate nonmarket failure and it should  
9 eliminate it. So just listing them off, yes, the  
10 overlay approach, I've already advocated that and  
11 it's very good. And the PCS experience is a very,  
12 very good boilerplate. Two, the underlay approach,  
13 very, very nice, said well by Jennifer. Licensed  
14 underlay rights do give you somebody to look to.  
15 The question just brought up about the device and  
16 the licensee connecting the two, yeah, that's  
17 something that maybe if you put liability on the  
18 new underlay licensee to actually come up with a  
19 mechanism, you could do that, but what you should  
20 do in all of these -- well, I'll get to dispute  
21 resolution in a second.

22 Three, windfalls. You certainly do not  
23 want to tax them, auction these new rights. As  
24 said before, the way to get the licensee is not to  
25 discourage the new innovative use that brings

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1 service to the public and raising the tax rate on  
2 that activity which is the most progressive of all,  
3 the way to get it at the incumbents is to introduce  
4 competition all around them and force them to go  
5 after innovative uses and as just was said in this  
6 very long and interesting comment from the  
7 audience, you want, you think and that's an  
8 excellent format, think about this underutilized  
9 spectrum out there. Whether it be a public service  
10 license band or any other band and how do you get  
11 entry in there? How do you get efficient use of  
12 that spectrum? And what you want is you want that  
13 licensee who is sitting there with some sort of  
14 fuzzy control over it because there's no explicit  
15 property rights, certainly, but you want that  
16 licensee to be part of the solution. You want that  
17 licensee to be investing in research and  
18 development to come up with ways to better use that  
19 to negotiate with alternative users and  
20 technologies and so forth and so on, so you throw  
21 the new rights to auction or you tax it away  
22 through fee structures, you just kill that  
23 incentive. And by the way, the Northpoint, broad  
24 wave example that somebody brought up, a perfect  
25 example of killing the incentives for innovation by

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1 going to a licensed auction system and then lastly  
2 on -- what I don't see right here, I know you've  
3 talked about it elsewhere, I'm just saying -- the  
4 real action here on public failure and if you want  
5 to call it market failure, that's fine too is  
6 dispute resolution. These interference -- you  
7 can't just say all we're going -- we're going to  
8 deregulate, we're just going to worry about  
9 interference and expect that there's going to be  
10 any big action. That's all incumbents need is an  
11 interference dispute. And we can take 25 years on  
12 that and that's great. That's as good as anything  
13 the public interest standard ever offered for  
14 incumbent protectionism.

15 So what you really want to think about  
16 is efficient ways to get the liability on the --  
17 both the incumbents and the new users in a way that  
18 can be resolved fairly quickly. That doesn't mean  
19 a perfect solution, okay? The ideal is the enemy  
20 of the good. You don't want to get these rules too  
21 good because that will take forever. You want a  
22 reasonable starting point and then you want to move  
23 away from the current system certainly where ex  
24 ante, before any entry is there, the new rival to  
25 all the incumbents has to prove that there will be,

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1 you know, never will be anything that goes wrong  
2 and just remember what happened with PCS. Evan  
3 remembers this. The PCS incumbent said if you have  
4 new use in the 1.8, 1.9 gigahertz band, people will  
5 die. If the incumbents have any new uses around  
6 them, people will die and you know, maybe there's  
7 been a report we haven't heard about, but the fact  
8 is it seems to have gone a little smoother than  
9 that and all these excuses about how the  
10 interference is going to kill people will fall by  
11 the wayside if you go to a system where the  
12 entrants have an ability to get in the market  
13 quickly. They have to -- there may be some  
14 regulatory function here. There probably is, in  
15 making sure that the entrants have liability, that  
16 they don't spread a lot of interference around and  
17 say oh, that wasn't my machine. And then walk away  
18 from it. So you do want to have liability and get  
19 a market going in terms of consulting firms and  
20 institutions that will actually monitor spectrum,  
21 band managers, frequency coordinators, equipment  
22 manufacturers, insurance companies, that will  
23 actually certify what the actual damage is by new  
24 use. But you want new damage, okay? The entire  
25 system is rooted against new damage. You want new

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1 damage. You don't want a lot of it, but you want  
2 some of it and you want it certainly to be limited  
3 and much smaller than the gains. Now the market  
4 will sort that out if you allow this quick low  
5 transaction cost adjudication to work in an  
6 environment where the incumbents have an incentive  
7 to actually talk about real interference and not  
8 just hold the process up by talking about what they  
9 say is interference, but really is fear of  
10 competition.

11 MR. CALABRESE: Yes, I think three of  
12 the four options that Michele outlined could be  
13 combined in a way that's very consistent with both  
14 the Communications Act and trends in the  
15 technology. First would be, I would say, underlay  
16 everywhere, so that we require incumbents to accept  
17 noninterfering uses, subject to the caveats that  
18 David just mentioned.

19 Secondly, when we should relicense  
20 under these new spectrum usage rules in other  
21 words, this sort of market and service flexibility  
22 probably reshaping the license around primarily  
23 around interference, okay, but in doing that it's  
24 this tough transition issue. So as Michele  
25 mentioned, you could have voluntary reclamation or

1 mandatory and again, I think we need to use  
2 probably a version of both.

3 We can have voluntary recognition,  
4 reclamation by giving incumbents and incentive to  
5 relicense under these new flexible rules in return  
6 for paying a market-based spectrum user fee to the  
7 public and we see that's exactly where Congress  
8 went, for example, with DTV when what they said was  
9 for this new digital channel that they gave in 1996  
10 and it was a bad policy in many other respects, but  
11 one they said is that if it's used, they gave  
12 flexibility to use it for things other than  
13 transmitting a primary signal for quote free TV,  
14 but in return the broadcasters have to pay 5  
15 percent of their revenue on those ancillary  
16 services. But there will be incumbents who we find  
17 because, in part, because they're not efficient in  
18 using their spectrum, don't want to start paying a  
19 rental fee and so that's where it can be mandatory  
20 and we can auction overlay rights. In other words,  
21 they can continue doing what they've been doing  
22 with interference protection, but their  
23 interference protection for that old service should  
24 wear away and if the auction winner wants to  
25 compensate them to leave early we can do again what

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1 NTIA suggested recently with respect to the  
2 military and have some sort of compensation for  
3 either reasonable relocation costs because they can  
4 move to cheaper spectrum or for the depreciated  
5 value of their capital equipment through some sort  
6 of relocation trust that pools the auction  
7 proceeds.

8 But those would be, that would be a way  
9 I think to combine the elements and do this in a  
10 balanced fashion.

11 MS. FARQUHAR: We'll let other  
12 panelists address this issue who want to and then  
13 we'll go to the audience.

14 MR. KURTIS: The only thing that I  
15 would point out since Mr. Hatfield is not here to  
16 do it for his -- on his own behalf, if you're going  
17 to allow licensing on a noninterference basis, then  
18 you need to find what interference is. For  
19 example, if someone purchases a \$3 radio with a  
20 wide open front end on it, it's going to be subject  
21 to interference in situations where the \$50 radio  
22 with the well-defined front end filter would not  
23 receive interference.

24 So I think if we're going to go down  
25 the route of an underlay that is given on an

1 non-interfering basis, we need to make sure that we  
2 have some standard for the equipment on both ends  
3 of the radio link that the incumbent has on what is  
4 and is not entitled to protection so we don't,  
5 through the back door, reward the incumbent that  
6 puts the least efficient equipment out there  
7 because that has the greatest susceptibility to  
8 interference.

9 MS. WARREN: Just two points. I guess  
10 in my earlier comments about the licensed underlay  
11 and the way I view the underlay scenario that was  
12 laid out earlier, it's almost like licensing a  
13 secondary service. So that in effect the  
14 incumbent, if we want to call it that, would be  
15 still primary have the flexibility to evolve its  
16 technology. It wouldn't be frozen. It would be  
17 stifled. But at the same time if some other  
18 service can on a non-interfering or a secondary  
19 basis use that spectrum and be licensed so again we  
20 have the accountability, that would seem to be a  
21 good marriage.

22 With respect to a point Michael made in  
23 terms of old technology, I think we need to talk  
24 about what's old. Because I've been very confused  
25 by FCC decisions where there's been promotion of

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1 what they called new technologies, but it's been I  
2 will say that in promoting new technologies often  
3 times it ignores another technology that's only  
4 recently been licensed, not even been deployed.  
5 But somehow it doesn't count any longer as a new  
6 technology.

7 I'm not quite sure when we talk about  
8 old versus new where we want to strike that  
9 defining line and that's kind of risky. So I  
10 prefer incumbent use if you like, but old and the  
11 promotion of new technology is something I think  
12 the Commission needs to define a little better when  
13 it looks to the statutory admonitions that it has  
14 to promote new technology to be a little clearer  
15 about what constitutes it and when you stop being  
16 it.

17 MR. WYE: I'd just like to pick up on a  
18 point each from Michael and Jennifer. To the point  
19 of the underlays, I agree that you absolutely need  
20 to determine ahead of time what the interference is  
21 going to look like. And this goes back to the  
22 conversation we've had before on this panel and  
23 back to the interference workshop as well, is what  
24 is harmful interference. Got to start there.

25 Okay, once I understand that then we

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1 start to talk about you know underlays in a very  
2 specific manner, then we have to figure out okay,  
3 what level of harmful interference from this  
4 underlay or these underlays is kind of the right  
5 amount? And as you consider that, Jennifer picked  
6 up the point which is absolutely crucial is that  
7 you somehow can't do anything that then locks in  
8 the incumbent, if you will, still primary license  
9 service, because if I have an underlay come  
10 underneath me and non-interfering, terrific. But  
11 then the next year my vendors and I get together  
12 and work up a much more efficient technology that's  
13 going to allow me to double my capacity, triple my  
14 throughput speeds, and all of a sudden I find I  
15 can't do that because of the underlay. I've got a  
16 big problem. That's not a good problem for me to  
17 have.

18 MS. FARQUHAR: Audience? Questions,  
19 comments?

20 (Pause.)

21 Anything else from the panel before we  
22 close?

23 MR. FURTH: This is what happens with  
24 Friday afternoon panels.

25 MS. FARQUHAR: Joe, I think you get the

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1 last word here.

2 MR. GATTUSO: Dangerously, I've not  
3 been joining in here, and since I'm the only person  
4 who hasn't spoken from the panel on this, I keep  
5 thinking this, and maybe I'm just on this one note  
6 today, but it seems like the challenges with  
7 respect to these types of transition mechanisms  
8 still have to do with knowing what rights are out  
9 there and then having to work out how the  
10 incumbents feel about those rights. And it's  
11 something like David was just saying with respect  
12 and also Michael about the interference right.

13 What the interference rights are, who  
14 has them, and what do you do when change happens?  
15 And we think about that with respect to federal  
16 government users who even in shared spectrum may be  
17 changing systems in the future or may be  
18 envisioning new systems, and if you plan an  
19 underlay and overlay type of situation, you don't  
20 know how necessarily that's -- you don't know  
21 what's there now in terms of rights and you don't  
22 know what's evolving in the future.

23 I do tend to think of these, as  
24 Jennifer was saying, as secondary, primary, really  
25 co-primary situations. We do have the experience

1 from the past with shared spectrum and it's  
2 important to I think the whole theme of this  
3 discussion is define the rights, because you're  
4 never going to be able to solve these problems  
5 without knowing what you're starting with.

6 MR. FURTH: Okay, well, I would like to  
7 thank all the panelists for staying extra long on a  
8 Friday afternoon to talk about these issues. I  
9 think you've given us a lot of food for thought as  
10 all of the panels have and now for those of us on  
11 the task force, the real work in a sense begins  
12 with trying to take all of these good insights back  
13 and try to come up with a report that will  
14 translate those into good recommendations for the  
15 Commission and for future policy.

16 DR. HAZLETT: That's why they call it a  
17 task force.

18 MR. FURTH: Yes, indeed. It's quite a  
19 task.

20 Paul, I see Paul Kolodzy over there  
21 raring to go and we all are. So again, thank you.

22 Thank you very much.

23 (Applause.)

24 (Whereupon, at 3:39 p.m., the meeting  
25 was concluded.)

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