

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

In the Matter of	)	
	)	
Amendment of the Commission's Space	)	IB Docket No. 02-34
Station Licensing Rules and Policies	)	
	)	
2000 Biennial Regulatory Review –	)	
Streamlining and Other Revisions of Part 25	)	
of the Commission's Rules Governing the	)	IB Docket No. 00-248
Licensing of, and Spectrum Usage by,	)	
Satellite Network Earth Stations and Space	)	
Stations	)	

**COMMENTS OF TELEDESIC LLC**

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## **SUMMARY**

Teledesic LLC thanks the Commission for its willingness to make an honest and clear-eyed evaluation of the current state of satellite licensing in the United States. Just as the Commission has long deserved credit for fostering the growth of the satellite industry, through “Open Skies” policies and innovative administrative procedures, the Commission now deserves at least as much credit for recognizing that the “processing round” system from decades past is broken. It is an even greater credit to the Commission that it is willing to discuss the breakdown of the licensing process publicly, and to propose a much more efficient replacement which the NPRM calls a “first come, first served” system. Although the system might better be called “first filed, first processed,” Teledesic strongly endorses the general approach and urges the Commission to adopt it. Teledesic also agrees with a number of other reforms proposed by the Commission, particularly the proposal to eliminate the anti-trafficking rules.

Historically, the purposes of the processing round system were to avoid administrative delay and preserve opportunities for meaningful entry. The system succeeded wonderfully in achieving these goals for many years, but it has now outlived its usefulness and has become part of the problem rather than part of the solution. In addition, processing rounds encourage speculative applications; deter innovative proposals; discourage due diligence prior to filing; virtually prevent individualized treatment of applications; create regulatory gridlock; and effectively “warehouse” spectrum, keeping it out of productive use. These flaws in the system have become mutually reinforcing, making the entire administrative scheme dysfunctional.

The most important of the proposed reforms is the “instant cut-off proposal.” This proposal, which essentially turns each application into a processing round of one, is the key to any realistic program of reform. Instant cut-offs will correct many of the problems with

processing rounds in one bold stroke, leaving a “processing queue” instead of a series of processing rounds.

Other details of the Commission’s reform proposal are good, but can be improved even further if legacy concepts from the era of processing rounds are eliminated. There is no place in a processing queue regime for any “lead application,” nor should there be multiple queues in the way that there have always been multiple rounds. Moreover, the Commission should strive to grant or deny applications, not hold them in abeyance; keeping ungranted applications on file is simply warehousing by another name. In addition, the Commission’s proposed tie-breaker for applications filed at the same time is not a very efficient outcome as a general matter, and the public interest would be well served by rules making simultaneous consideration as unlikely as possible.

The Commission’s proposal on amendments represent a sensible way of carrying existing law forward without substantive change in a processing queue regime. The proposal regarding modifications does not accomplish the same end, and the logic behind that proposal is not entirely clear. The Commission should recognize that the substantive law of modifications already protects the rights of previously licensed systems and pending applications as a substantive matter, so no previous licensee or applicant is prejudiced if as a procedural matter the Commission processes a modification outside the queue, as soon as possible after it is filed.

The Commission’s proposals for limiting speculative applications are reasonable, but by far the most effective measures the Commission can take to discourage speculative applications are to apply instant cut-offs and keep the processing queue as short as possible.

The Commission’s alternative proposal for “streamlining” the processing round system is doomed to failure because it is almost entirely cosmetic and fails to get to alter the incentive

structure that has created today's problem. Moreover, there is no clear reason to prefer such an exercise in deck-chair rearrangement because the processing queue regime offers all the benefits of processing rounds plus more.

The Commission should eliminate its anti-trafficking rules, for the excellent reasons stated in the NPRM as well as others.

The Commission's technical information proposals are helpful revisions, but some additional flexibility should be built in to make sure that innovative applications are not foreclosed.

Finally, Teledesic generally supports the Commission's proposals regarding financial qualifications and milestones. The proposal to "grant-stamp" replacement satellite applications is also an effective way to avoid wasting staff resources on easy cases. However, Teledesic notes that an even better way of reducing waste would be for the Commission to make a renewed effort to process petitions for reconsideration of licensing matters within the statutory time period of ninety days, possibly through use of a "denied" stamp or at most the liberal use of one- or two-paragraph orders.

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## I. THE PROCESSING ROUND SYSTEM HAS OUTLIVED ITS USEFULNESS AND NO LONGER ACHIEVES ITS INTENDED PURPOSES.

The Commission has done much to promote the success of commercial satellite communications over the last thirty years. The evolution of licensing policies, beginning with the “Open Skies” decisions,<sup>1</sup> has been part of that success. But it would obviously be wrong to conclude that today’s licensing regime is optimal simply because the satellite industry has succeeded. Instead it is useful to look back at how and why the processing round system evolved into what it is today, and determine whether it still serves the policies that led to its adoption – administrative speed and the preservation of opportunities for competitive entry. No knowledgeable, fair-minded observer can honestly say that processing rounds are still effective when measured against these goals.

It is sometimes said that every problem was once a solution, and this is certainly true of processing rounds. Prior to the adoption of the processing round system, the Commission was constrained by *Ashbacker*<sup>2</sup> to give simultaneous consideration to *any and every* pending application that would be mutually exclusive with another application, no matter when the two applications were filed. Hence, if the Commission were putting the final touches on a license for a geostationary satellite at 101° W.L. and a new application for the same frequencies, also at 101° W.L., came in the day before adoption, under *Ashbacker* the Commission would be forced to start all over; it could not proceed with the license it was ready to grant without giving comparative consideration to the newly filed application. Regardless of which application was ultimately to be preferred, this was an obvious waste of administrative resources. By the same token, licensees had no incentive to choose unoccupied orbital locations, because even if a

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<sup>1</sup> See, e.g., *Domestic Communications Satellite Facilities*, 22 F.C.C.2d 86 (1970) (*Domsat I*).

<sup>2</sup> *Ashbacker v. FCC*, 326 U.S. 327 (1945).

location were unoccupied at application time, the application could later be rendered mutually exclusive if another applicant filed on top of it, either intentionally or inadvertently. And both public and private interests were harmed by the delay that would inevitably result if an eleventh-hour application had the same procedural status as one that was about to be granted.

Cut-off notices provided the critical answer to the delay and efficiency problems that *Ashbacker* created for satellite licensing. Periodically, the Commission collected all of its pending space station applications and issued a “cut-off” notice stating that no future applications would be considered until the group of pending applications had all been processed. Thus was the “processing round” system born. As early as 1980, the U.S. Court of Appeals for the D.C. Circuit wrote prophetically of the public harms that result from delays in the licensing process:

Ever since the decision in *Domsat II* the FCC has designed its procedures to minimize delay in developing the domestic satellite industry. This court has specifically approved that approach. . . . In this dynamic and technologically innovative industry, a proposed venture may become obsolete in just a few years. Even without regulatory delay, a satellite firm is faced with the daunting prospect of time-consuming research and construction, which entail advance planning and risky lead time – and which may lead to naught. **To delay a proposed project six months will increase capital cost and diminish technological advantage; to delay it a year or more may destroy its attractiveness as an investment.** . . . We recognize that the need for expedition will not justify an agency’s failure to carry out its statutory responsibilities, but the relative urgency of a decision is a thoroughly appropriate factor for an agency to consider when crafting its procedures.<sup>3</sup>

The other major policy objective the Commission has pursued since the “Open Skies” years is the preservation of the “opportunity for meaningful entry,” which the Commission has described as lying “at the very foundation of our domestic satellite policies. A meaningful

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<sup>3</sup> *United States v. FCC*, 652 F.2d 72, 95 (D.C. Cir. 1980) (emphasis added; footnotes and citations omitted).

opportunity must encompass not only the initial entry decision, but also a reasonable opportunity to expand as success in the market place grows. . . . To attain this objective, our policies cannot flow from conditions of orbital scarcity. Rather, we think it essential to retain our ability to accommodate new satellite proposals without extended administrative delays to the extent that this goal is compatible with efficient use of the orbit space resource.”<sup>4</sup> In furtherance of this open entry policy, the Commission has over the years adopted various policies designed to ensure that applicants would make the most of the spectrum, such as two-degree spacing, full-frequency re-use, and at times rationing of orbital or spectral resources.<sup>5</sup>

Let no one frame the question in this rulemaking as whether these policies were a success. They were. The question in this rulemaking is whether the policies continue to succeed. They do not. In 1980 it took only seven months for a domsat processing round to move from cut-off notice to orbital assignments. By contrast, the most recent GSO processing round (the second Ka-band GSO processing round) took nearly four years from cut-off notice to assignment (October 1997 to August 2001), and there are currently at least three processing rounds that are more than four years past the cut-off notice – including one “second-round” proceeding in which the requested spectrum has been properly allocated both internationally

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<sup>4</sup> *Licensing of Space Stations in the Domestic Fixed-Satellite Service and Related Revisions of Part 25 of the Rules and Regulations*, 88 F.C.C.2d 318, 330 (1981) (proposing reduced orbital spacing of 2°).

<sup>5</sup> Consistently with the policy of ensuring that satellite networks have room for expansion, rationing has been used not only as a way of favoring new competitors, but also as a way of preserving expansion opportunities for incumbents. For example, the 1980 domsat assignment order (concluding the second domsat processing round) limited new entrants to two orbital locations each, but specifically refused to limit incumbents to three each. 84 F.C.C. 2d 584, 604 ¶ 51 (1980). The incumbents successfully argued that because they were the pioneers who had taken the risks to build a successful satellite industry, they deserved more of the remaining resources than the new entrants did. 84 F.C.C. 2d at 591-92 ¶ 22.

and domestically since before the pending applications were filed.<sup>6</sup> A licensing system that *tolerates* such gridlock (let alone a system that actually fosters it) fails any objective test of administrative speed. And incentives for innovation and competitive entry are obliterated by a system that first invites incumbents to copy the new proposal and then puts both the entrant and the incumbent on ice for four years.

The twin failings of the processing round system in terms of speed and open entry are the “bottom line” problems that call out for reform, but a host of less obvious flaws present themselves. No administrative process is perfect, but in some ways it is the sheer number of serious distortions caused by the processing round system that is so remarkable. Before turning to the specific reform proposals, it may be useful to catalog the more serious problems with processing rounds here:

- Filing windows create a land rush mentality that produces a large number of speculative applications;
- Group processing places the licensing of innovative proposals at the mercy of incumbents who may have little or no interest in receiving a license promptly;
- Simultaneous preparation of so many applications often makes it impossible to prepare an application that either avoids interference problems or presents a well-considered strategy for addressing them;
- Group processing makes it prohibitively difficult for the Commission to address the merits of individual applications in any meaningful way;

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<sup>6</sup> See Report No. SPB-106, 13 F.C.C. Rcd. 8020 (1997) (public notice initiating second Ka-band NGSO FSS processing round).

- Band-specific definition of processing groups overlooks the complexity of modern system designs and leads to gridlock; and
- Long delays in processing applications effectively “warehouse” spectrum.

These flaws are not just cumulative, but mutually exacerbating. That is, the fact that some applicants benefit from delay means there is even less incentive for those applicants to use due diligence before filing; the presence of poorly prepared applications tends to slow down the process even further; the expectation of long delays increases the incentives for speculative overfiling, etc. The system as a whole has now become so dysfunctional that dismantling it has become a public policy imperative.

## **II. THE “INSTANT CUT-OFF” IS THE MOST IMPORTANT PROCEDURAL REFORM THE COMMISSION SHOULD MAKE**

The NPRM contains a great many useful suggestions for reform of the licensing process, but by far the most important is the proposal to do away with “filing windows” and instead give individualized consideration to each application. This is accomplished by applying the traditional processing “cut-off” to each application *as of the time it is filed with the FCC*, instead of opening up a filing window for competing applications that would be eligible for simultaneous consideration. In the words of the NPRM, “a single satellite application filed on a given day will be treated as a processing round of one, which would cut off the filing rights of applications filed on any subsequent day.”<sup>7</sup> Even if every other proposal in the NPRM were rejected or altered, this “instant cut-off” proposal should be adopted. The effect of the instant cut-off would be to

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<sup>7</sup> NPRM ¶ 43.

convert the existing system of processing rounds into a system of one or more processing *queues*.<sup>8</sup>

**A. Instant Cut-Offs Facilitate Reasoned Adjudications, Discourage Speculative Filings, and Reward Responsible Pre-Filing Conduct.**

The primary benefits of the instant cut-off are three-fold. First, it gives Commission staff greater freedom to evaluate each application on its own merits, freed from the *Ashbacker*-driven constraints that militate strongly against any individualized determinations about any of the applicants in the round. In particular, where there is a serious question about how many applications can be granted in a particular band, the Commission can use its reasoned discretion to reach a plausible answer, after full public consultation pursuant to the notice and comment provisions of the Communications Act and the Administrative Procedure Act. By contrast, with processing rounds, the Commission exhausts its policy options very quickly. The Commission knows that it must either accommodate *all* qualified applicants or order a comparative hearing. The “auction” option that used to be a credible threat has now been removed. Comparative hearings are correctly and universally regarded as unthinkable (or in statutory terms, not in the public interest), so the Commission has essentially no choice but to find that the available spectrum will support all qualified applicants – and disqualification of any applicant has been virtually unheard of in recent years. Since the number of applicants who may happen to apply in a given round is essentially a random number from the Commission’s perspective, any licensing system that pushes the Commission into finding that this random

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<sup>8</sup> Teledesic explains below why a single queue should be the ideal, even though it is probably not in the public interest to adhere inflexibly to that ideal.

number of systems just happens to be the number of systems that can feasibly share the band is an invitation to arbitrary and capricious decisionmaking.<sup>9</sup>

The second major benefit of the instant cut-off proposal is that it will alter the operators' pre-filing incentives in such a way as to reduce the number of speculative applications. The Commission has previously acknowledged that *filing windows create an incentive for speculative filings*, and experience with the current processing round system confirms the fact. Indeed, the Commission's 1982 cut-off notice for the third domsat processing round stated that the cut-off would be "effective at the time of its adoption, *i.e.*, at 11:15 a.m. (EDST), May 18, 1982."<sup>10</sup> Not only did this not provide a generous filing window, it actually had the effect of cutting off the pending applications *two days before the order was even released to the public*. The Commission explained that "delay in implementing this procedure may well encourage a large number of speculative new filings. This would impair our ability to act expeditiously on currently pending applications. This in turn would be contrary to the public interest in the timely and orderly provision of additional domestic satellite service."<sup>11</sup> By contrast, when the Commission's 1983 cut-off notice for the fourth domsat processing round allowed sixty days for the filing of competing applications, the Commission was deluged with applications from twenty-one different entities seeking no fewer than eighty-five space station

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<sup>9</sup> See also Part VI *supra*. Often, the Commission seems to recognize that the number of licenses may be excessive but hints that in all likelihood some of them will never deploy. That prediction is surely correct in a number of recent cases, but again, instead of implementing sound spectrum management policies, the Commission is relying on a random outcome (number of systems deployed) over which it has absolutely no control.

<sup>10</sup> *Processing of Pending Space Station Applications in the Domestic Fixed Satellite Service*, 90 F.C.C.2d 1, 4 (1982).

<sup>11</sup> *Id.*

authorizations.<sup>12</sup> With this type of evidence against the filing window, it would be very difficult to justify a decision not to adopt the Commission's instant cut-off proposal.

Moreover, it is both common sense and common knowledge that applications solicited under "filing window" scenarios are more likely to be speculative, because there is rarely any firm corporate commitment behind them. It would be surprising, after all, if a company that was not already preparing to file a satellite application somehow became willing to make a firm commitment of several hundred million dollars – or even several billion – within a sixty-day period, just because the FCC opened a filing window. And under a processing round system, these half-hearted applicants have little incentive to be constructive during industry negotiations – and they may in some cases have substantial incentive to be as slow and obstreperous as possible.

The third major benefit of the instant cut-off is that it encourages applicants to minimize potential interference before they file. Applicants who know they will be in a processing *queue* (rather than a round) cannot count on the Commission (or other applicants) to do their interference studies and develop sharing strategies for them. Instead, they must use due diligence *before they file* or risk denial of their incompatible application. If they are proposing to operate co-frequency, they must figure out how they will share and demonstrate in the application that it will work. If they are proposing a particular location in the geostationary arc, they must select the one that best fits their business plan, taking into account the locations already licensed, previously filed applications, the prospect that existing licensees might not launch, the prospect that pending applications might not be granted, the ITU coordination priorities (or lack thereof) at various locations, and the likelihood that international

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<sup>12</sup> *Licensing Space Stations in the Domestic Fixed-Satellite Service*, 101 F.C.C.2d 223, 223 ¶ 1 (1985).

coordination will be possible. The Commission well knows how complicated these considerations are, because for a number of years much of the industry has been relying on the Commission to do this part of what should be the industry's job. And in fact, the Commission's procedures have largely prevented the industry from doing this sort of due diligence before filing. The policy of assigning GSO applicants to orbital locations other than those they requested minimizes the incentive to do any serious due diligence on coordination priority, and it is obviously impossible for any applicant to develop a plan for sharing with the other applicants in the same processing round until those other applications are available for inspection.

Together, these three advantages make the instant cut-off proposal clearly, even lopsidedly, superior to the old system of filing windows and processing rounds. Filing windows and processing rounds produce (1) more applications from (2) less committed applicants with (3) less interest in prompt conclusion of licensing and (4) less concrete technical and regulatory thought behind them. And to top it all off, (5) the FCC has almost no choice but to try to accommodate every applicant. These ingredients add up to a recipe for disaster, and unfortunately too many have tasted it.

**B. Instant Cut-Offs Preserve Opportunities for Public Debate and Open Entry.**

While it is most important to understand what the instant cut-off would do to improve satellite licensing, it is almost as important to understand what it would *not* do. In particular, (1) it would not in any way diminish the opportunity for public debate on innovative or questionable proposals; and (2) it would not give first movers the ability to monopolize new services. Public participation is preserved because the adjudicatory proceeding on each license

is fully transparent and subject to all the protections of the Communications Act and the Administrative Procedure Act. Any party can file a petition to deny, a comment, an informal objection – indeed, anything that can be filed in an adjudicatory proceeding today, not to mention a petition for rulemaking if appropriate. If any given proposal requires any reallocation of spectrum, a rulemaking will generally be required; some proposals may also suggest the need for new or revised service rules.<sup>13</sup> In any of these cases, the Commission’s rulemaking authority is undiminished. Competitors can even file applications for competing systems – they simply cannot demand comparative consideration of their applications, which removes the ability to file “blocking” applications solely for the purpose of delay. The loss of that form of “public participation” should not be mourned. Particularly when a company has a new idea for satellite service, public input into the consideration of that application is essential; but there is no good reason for the Commission to give the rest of the industry sixty days to tag along with me-too applications.

Nor does the instant cut-off approach pave the way for monopolization by first movers. The FCC’s adjudicatory authority, rooted as it is in the public interest, clearly allows the Commission to deny a request that is deemed to be excessive (as it did with SBS in 1983),<sup>14</sup> to grant an application only in part,<sup>15</sup> to condition a license on compliance with any future rulemaking,<sup>16</sup> to grant a license while making clear that co-frequency operations will be

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<sup>13</sup> For instance, service rules may define licensing conditions that allow a certain number of systems to access the spectrum under consideration. The service rules may even define the number of systems that will be licensed under these conditions.

<sup>14</sup> *E.g., Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service*, 94 F.C.C.2d 129, 137 ¶ 19 (1983).

<sup>15</sup> *E.g., Loral Orion Services, Inc.*, 14 F.C.C. Rcd. 17665 (Int’l Bur. 1999).

<sup>16</sup> *E.g., Panamsat Licensee Corp.*, 13 F.C.C. Rcd. 1405, 1414 ¶ 27 (Int’l Bur. 1997).

authorized in the future,<sup>17</sup> or to modify a license in the interest of more efficient spectrum use in the light of technological advances.<sup>18</sup>

Entrenched interests who benefit from delay are bound to criticize the Commission's proposal to abolish filing windows, probably by describing the proposal as a radical departure and predicting dire consequences if it is adopted. The truth, however, is that licensing with instant cut-offs would look very much like the current licensing process, only faster and with fewer shenanigans. Application  $A_1$ , filed at time  $t_1$ , would go on public notice and the full participation of all interested parties would be invited in the context of that adjudicatory proceeding – just as it is under the processing round system. If the filing of  $A_1$  indicated a rulemaking might be necessary, the rulemaking could be initiated immediately – just as it could under the processing round system.  $A_1$  might then be granted; or, if pleadings in the  $A_1$  proceeding showed that the  $A_1$  proposal was for some reason not in the public interest, the application might be denied, notwithstanding its position as first in the queue. None of this is much of a change, let alone a radical change.

The big difference would be that, whether granted or denied,  $A_1$  would receive the individualized, up-or-down decision on the merits that justice requires, without being yoked to any of the applications that might follow. It would no longer be possible to defeat or delay  $A_1$  by filing a subsequent “copycat” or “blocking” application. New applications patterned after  $A_1$  (or mutually exclusive with it) would not be expressly invited, and if  $A_1$  were truly ahead of its time it might be that no similar applications would be filed.<sup>19</sup> But if applications  $A_2$ ,  $A_3$ , and  $A_4$

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<sup>17</sup> *E.g.*, *TRW, Inc.*, 11 F.C.C. Rcd. 20419, 20425-26 ¶ 24 (Int'l Bur. 1996).

<sup>18</sup> *See generally Licensing of Space Stations in the Domestic Fixed-Satellite Service and Related Revisions of Part 25 of the Rules and Regulations*, 54 Rad. Reg. 2d (P & F) 577, 48 Fed. Reg. 40233 (1983).

<sup>19</sup> *See, e.g., Norris Satellite Communications*, 7 F.C.C. Rcd. 4289 (Com. Car. Bur. 1992).

were filed at  $t_2$ ,  $t_3$ , and  $t_4$ , each would be entitled to its own up-or-down decision on the merits, after  $A_1$  had been adjudicated. In processing  $A_2$ ,  $A_3$ ,  $A_4$ , and beyond, the Commission would grant the applications that were compatible with prior decisions and consistent with the public interest and deny those that were not.

In conclusion, the instant cut-off proposal is the key to any meaningful reform of the licensing process and is the absolute minimum the Commission must do if it intends to wrest control of its processes away from those who would abuse them. The current system of filing windows and processing rounds serves mainly to allow large and unimaginative incumbents to tie up the most interesting proposals of their more nimble competitors.<sup>20</sup> The public interest demands its abolition.

### **III. THE DETAILS OF THE COMMISSION'S PROCESSING QUEUE PROPOSAL ARE GENERALLY GOOD, BUT CAN BE IMPROVED EVEN FURTHER**

In general, the NPRM's version of "first come, first served" or "first filed, first processed" (hereafter referred to as a "processing queue" system) is comprehensive and extremely well reasoned. However, the text is sometimes tainted by certain concepts that seem to be left over from the era of processing rounds. If the Commission is to be successful in breaking the cycle of overfiling and delay, these vestiges of the failed processing round system must be eliminated. In particular:

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<sup>20</sup> In paragraph 41 of the NPRM, the Commission considers whether a "first come, first served" approach favors larger satellite operators on the theory that they are likely to be able to file their applications faster. This suggestion is flawed in two respects. First, history shows that many, if not most, novel system proposals come not from incumbents, but from small, entrepreneurial ventures with little or no track record, such as Teledesic, Skybridge, Virtual Geo, and (once upon a time) PanAmSat. Second, unless the Commission is expressly inviting a "land rush mentality" by opening a filing window, there is no reason to think that any two satellite companies would necessarily be working on similar applications at the same time. Without that assumption, the question of who is

- the Commission should strive to maintain a single queue as much as possible, and adjudicate each application as completely as possible, rather than maintaining a system of multiple queues;
- in most cases, the Commission should not hold applications in abeyance but rather move through the queue as quickly as possible, granting all grantable applications and denying those that cannot be granted;
- the Commission should hold open the possibility of granting some applications without necessarily adopting service rules first; and
- the Commission should adopt filing and cut-off procedures that make it virtually impossible for two applications to have the same status in the queue.

**A. The Commission Should Strive to Maintain a Single Queue.**

In a number of places, the NPRM seems to assume that there will continue to be identifiable groups of applications all processed more or less together, but that the applications will have different priorities *vis-à-vis* each other, with each group forming its own queue. This seems to be the only explanation for the repeated references to a “lead application,”<sup>21</sup> as well as the discussion of separate service and feeder link licensing.<sup>22</sup> The NPRM also suggests that these multiple queues will be distinguished in terms of the band segments they cover, much as processing rounds have been. These legacy concepts from the era of processing rounds assume

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Continued . . .

better positioned to file faster simply does not arise. Hence, the Commission’s proposal to eliminate filing windows is a sufficient answer to the concerns expressed in paragraph 41.

<sup>21</sup> *E.g.*, NPRM ¶¶ 33, 35,

<sup>22</sup> NPRM ¶¶ 38-39.

that applications naturally form themselves into groups, all for the same service in the same band(s) and all mutually exclusive within the meaning of *Ashbacker*. Recent history shows that assumption is no longer true, or at least it is not true often enough to form a reliable basis for an entire licensing scheme. As the Commission turns its reform proposals into rules, it must eliminate these outdated concepts.

In order to make the licensing process as fast and as fair as possible, the Commission should think of itself as working through a single queue of applications that may, but need not, have overlapping spectrum requests. The ideal should be to take up a single application, review every aspect of that application (no matter what band is concerned), issue a decision, and then move on to the next application – which may propose an entirely different service in an entirely different band.

The reason for insisting on the “single queue” ideal is that, as the Commission notes in several places, the increasing technical complexity of satellite proposals, and especially their RF plans, makes it less and less common for any two satellite operators to propose exactly the same combination of service links, feeder links, and orbital parameters. Indeed, one of the chief weaknesses of the processing round system is that it handles the increasing heterogeneity of system proposals extremely badly, putting some applications in multiple processing rounds,<sup>23</sup> and others in only one round even though that leaves large parts of the application in limbo as a

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<sup>23</sup> See *Celsat America, Inc.*, 16 F.C.C. Rcd. 14278 (Int'l Bur. 2001) (Ka-band feeder links); *Celsat America, Inc.*, 16 F.C.C. Rcd. 13712 (Int'l Bur. 2001) (2 GHz service links). Note that when applications are processed in multiple rounds, the rounds can become interdependent and regulatory gridlock can result. Celsat's 2 GHz MSS application proposed feeder links in Ka band, which required Celsat to participate in the second Ka-band GSO processing round in addition to the 2 GHz MSS processing round. Unfortunately, the Ka-band round was complicated by requests for hybrid service-link assignments – hybrid Ka- and V-band assignments for at least one GSO system and hybrid Ku- and C-band assignments for an NGSO system. This type of interdependence allows impasse in one processing round to infect others.

result of being in no round at all.<sup>24</sup> In addition, even where there is no frequency overlap whatsoever between two NGSO applications, they may still be mutually exclusive under *Ashbacker* because of the possibility of physical collisions – a type of mutual exclusivity based on orbital parameters, for which the current band-specific processing round system is completely unequipped. Simply put, licensing rules that depend on the traditional assumption that an entire group of applications are all for essentially the same resource no longer work, because the key assumption has been undermined by the evolution of commercial satellites.

Fortunately, this problem is easily dealt with, and the Commission gets it right in paragraph 44: when the instant cut-off rule applies, each application becomes a processing round of one. There will be no “lead application”; there will only be the application under review in a given order. Likewise, there is no need to calculate the place that a single application holds in multiple queues; instead the Commission will simply examine all of the requested frequency assignments in the application, grant the ones that are compatible with the existing interference environment and are otherwise in the public interest, and deny the ones that are not compatible or are contrary to the public interest. Applicants will thus have every incentive to apply for *assignments that work*, not assignments that might work someday (or assignments that make the Commission work). Neither the “lead application” concept nor the “multiple queue” concept should have any place in the Commission’s final licensing rules in this

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<sup>24</sup> Virtual Geo, for example, is included in the Ku-band NGSO FSS processing round because it proposes NGSO FSS use of the Ku-band frequencies. However, Virtual Geo also requested NGSO FSS use of the C band, and that request has not been cut off and is not currently in any processing round. It would appear that despite Virtual Geo’s participation in the Ku-band NGSO FSS processing round for more than three years, an upstart could file an NGSO FSS C-band application even today and claim the same procedural status as Virtual Geo with respect to those frequencies.

proceeding. Note that this greatly simplifies the treatment of hybrid satellites, which are somewhat of a conceptual problem under the processing round regime.<sup>25</sup>

In the discussion above, the single-queue concept is referred to as an *ideal*, signifying that in practice there will be good reasons for holding certain applications in abeyance while granting some that are lower in the queue. For example, if the processing queue framework were in place and the Commission determined that it would not be in the public interest to grant or deny applications in a given band until after a WRC, that should not prevent the Commission from skipping over those applications in order to approve the applications in bands where allocations and service rules are already in place. Nonetheless, the Commission's processes will work much more efficiently if a single queue is the theoretical ideal than if the system is conceived as multiple queues. The very simple yet very powerful animating principle should be to give every applicant, as quickly as possible, the up-or-down decision to which it is entitled, based on the record and the interference environment that exists at the time.

**B. The Commission Should Strive to Grant or Deny Applications, Not Hold Them in Abeyance.**

Paragraphs 33 and 34 of the NPRM state that the Commission will work through its queue only until it can grant one of a number of mutually exclusive applications, at which point it would "keep the subsequently filed applications on file" and consider them only if "at any time the licensee loses its license."<sup>26</sup> While it may be reasonable to hold applications for unallocated spectrum in abeyance while the U.S. pursues an international spectrum allocation, the Commission should not keep unprocessed applications in abeyance pending the possible default

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<sup>25</sup> See NPRM ¶¶ 59-61.

<sup>26</sup> NPRM ¶ 34.

of a previous licensee. Any system that allows ungranted applications to remain pending for long periods of time is tantamount to spectrum warehousing not by licensees, but by applicants.

To the extent that any application can be granted without interference to a previous licensee, it ought to be granted as quickly as possible. Indeed, one of the strengths of the processing queue approach is that it encourages system proponents to develop innovative ways of sharing with previously licensed systems so as to make the fullest use of the limited spectrum available. Thus, applications should generally be processed in the order received, even if processing the application means denying it.

Consider, for example, a situation in which four NGSO FSS applications are filed in the same band, with six months between each application. If the first two applications can both be granted, they should be. If then the third application cannot be granted consistent with the first two, it should be denied. This is fair to the third applicant, because that applicant had advance knowledge of the interference environment into which it would be launching, and yet apparently failed to design for that environment. Certainly, the third applicant's failure to devise a sharing strategy should not hold up the processing of a fourth or fifth applicant that did a better job of planning to share with existing systems.

This is quite an important point, because keeping an unprocessed queue of applications hanging around gives operators much the same incentive they have under the current system – to file placeholder applications on the perhaps slight chance that they just might turn out to be moderately useful – someday. Holding large numbers of applications in abeyance will make the entire process look very much like the ITU's coordination process, which is not the model the Commission should be emulating.

Framed somewhat differently, the Commission's legitimate concerns about a rash of speculative applications provide perhaps the strongest reason for the Commission to reconsider its proposal to hold ungrantable applications in abeyance. Consider that as long as the Commission is using implementation milestones, each prospective licensee would prefer to receive its license as close as possible to the time it really needs the spectrum; if the license is granted before the technology is ready or before the capital markets are ready to support the proposal, then the chances of default increase. This is true regardless of whether a processing queue or a processing round system is used. However, applicants must also worry about whether the spectrum will be available when they need it, and this is what leads companies to file in processing rounds for spectrum that is years away from being valuable for commercial development. Once one party stakes a claim, others feel compelled to follow suit, in large part because there is no disincentive for filing. The round will take so long that no milestones will be imposed for a very long time, and as long as there is no immediate plan to use the assets, having a gridlocked application on file without any prospect that it will be granted in the foreseeable future seems to offer the applicant the best of both worlds.

This "best of both worlds" scenario sometimes goes by another name: spectrum warehousing. By permitting the incumbents of, say, 1997 to stake claims to a band that may not be used until many years later, and then leaving those applications in limbo, the Commission is effectively tying up the band and preventing any future use of it. If there *were* an operator with an innovative technology that made the band suddenly usable, the late-arriving innovator would be out of luck, for failure to stake a claim in 1997. Similarly, if only one system proponent currently has the necessary technology but a dozen file applications in the same processing round, the one who is ready is essentially prevented from going forward by the eleven who are

only thinking about “someday.” Ironically, the Commission goes to great pains to prevent warehousing by *licensees*, yet the processing round system effectively permits warehousing by *applicants*, who have the power to keep their claims to a particular frequency band alive for years without facing any milestones, merely by avoiding any detectable progress toward a sharing solution or other negotiated outcome that will result in the issuance of licenses. Thus, if the Commission holds ungranted applications in abeyance, it will be facilitating a form of warehousing. And obviously, this starts a vicious cycle. The possibility of keeping one’s application on file for an extended period of time creates potential speculative value; this plus the potential danger of being frozen out of the band later increases the number of applications received; and the increased number of (more speculative) applications slows down the licensing process, which keeps the band unavailable to a newcomer for a longer period, which increases the incentives for a speculative application, and so on.

Thus, the Commission’s interests in preventing warehousing, preventing speculative applications, preserving entry opportunities, and speeding up the licensing process all converge on this point and militate against the “abeyance” proposal. The processing queue reforms will not achieve their full potential unless (1) the queue is always short enough to provide an opportunity for an operator with firm plans to enter service quickly; and (2) applicants who say they need a resource are challenged to use it right away. The only way to satisfy these conditions is for the Commission to work through the queue as quickly as possible, granting or denying each application as the interference environment and the public interest demand.

### **C. Service Rules May Not Always Be Necessary.**

Paragraph 35 of the NPRM states that when one or more applicants seek to provide a service for which there is an allocation but no service rules, the Commission will “not act on

any of the applications until we have adopted service rules."<sup>27</sup> The public interest might well require this result in a particular case, or even the majority of particular cases, but there is no reason for the Commission to state in advance that no application will be granted until after service rules are adopted. Like other administrative agencies, the FCC has substantial discretion to determine when it is best to regulate individual cases and when it is best to prescribe a rule. Some applications may well raise new policy issues of such magnitude that a rulemaking on service rules is required. On the other hand, it is at least conceivable that some applications – the first GSO satellite in the 71 GHz band, perhaps – will be similar enough to existing satellite services that the Commission could just as easily grant the application and include appropriate conditions in the license rather than legislating rules for a whole service just to govern one application.

There is relatively recent historical precedent for this treatment, as it is what the Commission did with Norris.<sup>28</sup> The Norris application raised a number of policy issues that could only be resolved in a rulemaking, and Norris in fact requested a rulemaking. However, the Commission saw that the FSS portion of Norris's application was consistent with existing FSS rules and could be granted without waiting for what eventually became a very long, drawn-out rulemaking on the management of the 28 GHz band. Subsequent events have made the Commission's decision to license Norris without adopting any service rules look wise indeed. Norris got its chance to deploy, and yet the Commission was not forced prematurely to commit itself either for or against Norris's broader proposals. Although Norris's system was

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<sup>27</sup> NPRM ¶ 35.

<sup>28</sup> *Norris Satellite Communications*, 7 F.C.C. Rcd. 4289 (Com. Car. Bur. 1992).

never implemented, that private failure did not have the industry-wide repercussions it would have had if the entire band plan had been based on Norris's proposal.

However, regardless of what one thinks about the Norris case, the larger point is that the Commission should retain discretion to deal with such "first mover" cases in whatever manner is most consistent with the public interest. By hypothesis such cases are difficult to foresee, and the Commission should therefore be very circumspect about announcing in advance how they should be handled.

**D. The Commission Should Make Simultaneous Consideration as Unlikely as Possible.**

Teledesic supports the Commission's proposal for mandatory electronic filing, and for determining the filing status of each application according to the nearest one-thousandth of a second if the Commission's network supports that level of precision. This aspect of the Commission's proposal is a good way to avoid any *Ashbacker*-based need for simultaneous consideration of applications. It is quite unlikely that any two application will be filed at the same thousandth of a second, or even the same minute, *if the Commission is not expressly inviting that situation by pre-announcing a "filing window."*<sup>29</sup>

The NPRM acknowledges a possibility that the eventual outcome of this rulemaking might be a system in which simultaneous consideration is possible, and proposes a default sharing standard (band segmentation) for mutually exclusive applications with the same

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<sup>29</sup> Filing for satellite systems is a continuous process if there are no preset windows. Examples of situations that might prompt companies to file their networks are innovative services and applications; new technologies; new allocations; existing licensees or pending applications being dropped thereby providing previously unavailable resources; other satellite filings; and FCC or industry announcements. Any of these situations might prompt a few or several new filings, but in any case these filings will be sent to the FCC after some requisite preparation time. In such a scenario, it is extremely unlikely that two such applications will be received at exactly the same time.

processing status. However, the adequacy of the default standard depends almost entirely on how likely it is to be necessary. In this case, the public interest would be well served if the Commission devoted its energy to ensuring that simultaneous consideration is never required.

As a general matter, band segmentation is not a very efficient default arrangement for sharing between FSS networks, because other mitigation techniques generally allow for significant co-frequency sharing, increasing the total capacity of both networks. This objection to default band segmentation is serious enough that it would be an inappropriate default mechanism if simultaneous consideration were as common as it is with today's processing rounds. Likewise, if applications were cut off only once a month, or even once a day, the likelihood of at least some cases of simultaneous consideration would be high enough that a better default standard would be necessary. However, assuming the Commission determines the priority of each application to the nearest second or the nearest thousandth of a second, the risk that two or more applications will be entitled to simultaneous consideration seems low enough to make this default outcome adequate, if not optimal. If an available assignment is segmented between two simultaneous applicants, any defaulted spectrum forfeited by one of those applicants should be reassigned to the other one, as the Commission proposes.

In addition, it makes sense in this situation, for the Commission to encourage settlement either by technical means of eliminating mutual exclusivity or by some commercial arrangement up to and including merger. Indeed, there seems little reason to limit the settlement window to sixty days. Whatever happens with the anti-trafficking rules generally, the Commission should encourage settlement between any two or more mutually exclusive applicants by making clear that its rules do not prohibit transactions between applicants entitled to simultaneous consideration under *Ashbacker*. In all of these matters, however, the Commission's real goal

should be to make sure that these procedures are never needed. Each application should stand or fall on its own merit, without being yoked procedurally to any other.

#### **IV. THE COMMISSION SHOULD FIT AMENDMENTS AND MODIFICATIONS INTO THE QUEUE SO AS TO CONTINUE EXISTING LAW.**

For amendments to pending applications, the Commission is essentially proposing to continue applying existing law – major amendments (*i.e.*, those that worsen the interference environment) go to the back of the queue, whereas minor amendments can be processed independently. Presumably, the major/minor determination would be made at the time the original application comes up for processing, and if the amendment is determined to be minor, the application could be processed in its amended form at that time. This continuation of existing law makes sense.

By contrast, the Commission proposes to treat modification applications in a bifurcated way that bears little resemblance to current law. For most modification applications, the Commission proposes that the modification goes to the end of the queue if it would create mutual exclusivity with an application already on file.<sup>30</sup> However, for a modification application that relates to a license “granted as part of a mandatory sharing arrangement to resolve a mutually exclusive situation,” the Commission proposes not to consider any modification seeking to “increase bandwidth.”<sup>31</sup> The policy goals behind this bifurcated approach are not readily apparent, but it is clear that the proposal is flawed.

Perhaps the biggest flaw is in the assumption that a modification is “major” if it is mutually exclusive with some previously pending application. This assumption does not hold

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<sup>30</sup> NPRM ¶ 58.

<sup>31</sup> NPRM ¶ 57.

for cases in which the previous application in question is already mutually exclusive with the mod applicant's original, unmodified license (or another previous license or application). For example, assume that Licensee *L* is licensed for GSO FSS use of 500 MHz of spectrum from 101° W.L. Applicant *A* has an application on file for the same 500 MHz from 101° W.L. when *L* files a modification application to change the emission designators for *L*'s system. Whether this occurs under a processing queue system or under current law, the procedural status of *L*'s modification application cannot be determined solely by comparing it to *A*'s application; one must also examine whether *A*'s application is grantable in the first place. If the modification makes an interference conflict with *A* no *worse* than it otherwise would have been, then the modification can be granted.<sup>32</sup>

The treatment of modification applications in a processing queue system can be substantially simplified in a way that effectively leaves current law unchanged, just as the Commission proposes for amendments. Modifications are somewhat more complicated than amendments, because determining a modification application's "place in the queue" has two dimensions – the substantive, "what can be granted" dimension and the procedural, "when is it processed" dimension. Considering the two dimensions separately clarifies the problem and suggests a relatively easy solution.

As far as the substantive dimension is concerned, current law already makes clear that a modification cannot be granted if it makes the overall interference environment worse for existing licensees or pending applicants. Conversely, if the modification improves the interference environment (or at least does not worsen it), it is generally granted. Thus, the substantive question that must be decided by the Commission in processing the mod is the

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<sup>32</sup> See *PanAmSat Licensee Corp.*, 14 F.C.C. Rcd. 2719, 2722 ¶ 9 (Int'l Bur. 1998).

same no matter *when* the modification application is processed, because the substantive standards for granting it already ensure that the modification will not adversely affect any existing licensee or pending application. Substantively speaking, a modification is essentially at the end of the processing queue no matter when it is processed.

Procedurally speaking, however, this is not a satisfactory result. Placing a modification application at the end of the queue for timing purposes would raise a very significant likelihood that the Commission would fail to process the application in time for the applicant to deploy the modified system. Under current law, the Commission deals with this problem by considering “minor” modification applications – those that do not degrade the interference environment – outside any processing round. By contrast, applications for “major” modifications are treated as new applications procedurally as well as substantively.

Putting the substantive and procedural dimensions back together, it becomes apparent that the way for the Commission to keep current law in effect is therefore to process modifications *outside of the queue, i.e.,* as soon as they are filed, but continue to make them substantively “junior” to all pending applications by applying the same substantive standards that already govern. A modification should be deemed minor, and therefore granted independently of any processing queue, unless it degrades the interference environment with respect to existing licensees or pending system proposals. If it does degrade the interference environment with respect to existing licensees or some pending application,<sup>33</sup> it should be declared “major” and reassigned to a place in the queue commensurate with the date on which the modification application was originally filed.

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<sup>33</sup> As with any new application, a modification application must take into account the interference environment in its modification request.

There remains only the question whether it is possible to define some types of modifications that should be considered *per se* “major.” Perhaps this was part of the intent behind the Commission’s bifurcated approach. If so, Teledesic would support a *per se* rule that modifications requesting new frequencies are presumed to be “major” and must be processed within the queue.<sup>34</sup> However, virtually any other modification, specifically including a change of orbital location for GSOs or orbital parameters for NGSOs, can under some circumstances improve rather than worsen the interference environment, and the major/minor determination in these situations should be made on a case-by-case basis.

## **V. THE COMMISSION’S PROPOSALS FOR LIMITING SPECULATIVE APPLICATIONS ARE REASONABLE, BUT INSTANT CUT-OFFS AND SHORT QUEUES ARE THE BEST WAYS TO PREVENT SPECULATION**

The Commission gives extended consideration to the adoption of safeguards against frivolous or speculative applications. Because a large volume of speculative applications can swamp virtually any licensing system, the Commission’s concern is understandable, and Teledesic will address the Commission’s proposed safeguards below. However, at the outset, it should be emphasized that if the Commission adopts instant cut-offs and keeps the absolute minimum number of applications in the queue at any given time, there will be substantially less incentive for speculative filings than there is under the processing round regime.

It is impossible to overemphasize this fact: The Commission’s best weapon against speculative applications is speed. If applications are routinely granted in six months (as they once were) and significant resources must be committed twelve months later, there is much

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<sup>34</sup> However, if such a presumption is appropriate, then contrary to the Commission’s proposal it would appear to be appropriate without regard to whether the original license was issued as part of a “mandatory sharing arrangement.” Furthermore, it is not clear what the latter phrase is intended to mean – is two-degree spacing a “mandatory sharing arrangement”?

less incentive for any company to file an application for a project to which it is not fully committed. This is one of the key advantages that a single, short processing queue has over the processing round model, which creates such lengthy delays that it is reasonable to file for any resource that might conceivably be needed at any time during the next seven to ten years. Indeed, as noted above, the Commission has itself recognized in the past that the opening of lengthy filing windows is likely to stimulate additional filings,<sup>35</sup> and experience with the processing rounds of the last twenty years confirms what common sense predicts. Without belaboring the point, it is highly unlikely that there were fifteen satellite companies actively considering commercial V-band projects before the Commission issued a “cut-off” notice opening a new filing window. Thus, there is good reason to believe that the “instant cut-off” proposal alone would make speculative applications much less likely than they are now.

In addition, Teledesic has also noted above that the benefits of filing a speculative application are generally proportionate to the amount of time the application can be expected to remain pending. A speculative application that is quickly granted is quickly exposed as speculative when the licensee fails to meet the milestones and has to surrender the license. On the other hand, if the application is allowed to remain on file for five years or more without requiring any serious commitment of resources, it is somewhat akin to a lottery ticket, which may turn out to be valuable depending on technological and economic developments during the intervening years. Thus, keeping the queue short, and giving prompt consideration to each application, is the best way for the Commission to discourage speculative applications.

Notwithstanding these inherent advantages of the processing queue proposal, Teledesic supports the Commission’s proposal to limit the number of applications that can be on file at

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<sup>35</sup> *Id.*

any given time. The limitation to five GSO orbital locations per applicant, and one NGSO satellite system per applicant, in each frequency band, is adequate to permit the vast majority of legitimate business plans. Moreover, if the limit proves to be too restrictive in a particular case, a waiver can always be sought. Teledesic also supports the proposed attribution rule.

However, the proposal to prohibit applicants from assuming any other applicant's place in the queue appears to be unjustified in light of the already-diminished risk of speculative filings that is inherent in the processing queue system. If the Commission is worried about transactions that are driven *solely* or even *primarily* by a desire to move up in the queue, then once again the best solution is for the Commission to keep the queue short. If the queue is short, then line-jumping will have little value and any transaction can be presumed to be for business reasons unrelated to the queue. Unfortunately, if the queue is long, then line-jumping may have considerable value, and may well occur. However, if one assumes a long queue then the Commission's proposal to send applicants all the way to the back of the queue represents an extremely serious, even Draconian punishment, at odds with the Commission's own economic analysis.

As an initial matter, it is not clear why the Commission's arguments against the anti-trafficking rules do not apply to this situation as well. Specifically, if business plans have changed and an applicant is unlikely to move forward, why not provide an incentive for that applicant to cut his losses and fold up before the Commission processes the application? If post-licensing transactions are permitted but pre-licensing transactions are forbidden, then a reluctant applicant will have little choice but to prosecute the application in order to sell it later.<sup>36</sup> That

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<sup>36</sup> There is a parallel here with the argument in Part III.B *supra* that spectrum can be warehoused just as effectively by a pending application as by a granted but unbuilt station license. With both warehousing and trafficking, the public policies are very much the same before licensing as they are

creates two adjudicatory matters requiring the Commission's attention – one license application and one transfer of control application – whereas a pre-licensing consolidation could conceivably *remove* one application from the queue. It would waste fewer resources, both public and private, if the applicant had an incentive to step aside before licensing.

But even assuming that line-jumping should be prohibited, the NPRM suggests that even transactions that are *not* motivated by line-jumping will be penalized. In particular, paragraph 53 says that if two companies agree on a merger or a transfer of control, then *any* pending applications by the surviving applicant will go to the end of the queue. If the transaction in question really has nothing to do with line-jumping, it is difficult to understand why the surviving company should lose *both* places in the queue. At worst, the surviving company should retain its original place in the queue, and if the Commission determines that the transaction was for legitimate business purposes unrelated to line-jumping, then there seems to be no reason why the merged entity should not enjoy both of the pre-existing places in the queue – one for each of the applications – even assuming for the sake of argument that line-jumping should be prohibited.

At best, the anti-line-jumping proposal seems premature. In this case, the risk of unintentionally discouraging or unduly complicating business transactions that are otherwise in the public interest seems unacceptably high. For this reason, it would be better for the Commission to gain some experience with a processing queue, and make a serious effort to

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Continued . . .

after licensing. In the case of warehousing, if it is in the public interest to make sure that unbuilt station licenses do not keep spectrum “out of circulation,” then it is equally important to make sure that ungranted licenses do not achieve the same end result. In the case of trafficking, if it is in the public interest to encourage failing operators to sell out in the secondary market sooner rather than later, then it is also in the public interest to encourage this at the application stage. As noted in the text, this will not encourage speculation unless the queue is allowed to become too long.

keep the queue short. The Commission can always promulgate an anti-line-jumping rule in the future if line-jumping develops as a public policy problem.

## **VI. ATTEMPTING TO REFORM THE PROCESSING ROUND SYSTEM IS BOTH HOPELESS AND POINTLESS.**

As an alternative to the processing queue proposal, the Commission seeks comment on a number of possibilities for “streamlining” the processing round system. Although some of the suggestions have merit, taken as a whole they do not address the fundamental problems with processing rounds and therefore cannot be considered a credible alternative to the processing queue proposal. Teledesic addresses each of the “streamlining” proposals briefly.

The first proposal (or group of proposals) is to “facilitate processing round negotiations” through various measures, including a sixty-day negotiation period, a variety of “preferences” for factors such as rural service or commendable deployment histories, and even a preference based on earlier filing dates (which seems to be merely a milquetoast version of the processing queue proposal). These proposals seem hopelessly naïve. The root of the problem with the processing round system is that many of the people filing applications have no immediate interest in seeing them granted; in fact, many have a fairly strong interest in seeing the process drag out as long as possible. No amount of “facilitation” will produce a negotiated agreement if even a few of the applicants prefer not to agree.

Likewise, preferences for new entrants, or for companies that have not missed milestones, or for those who have made demonstrable progress toward implementation of other systems, will not make it any easier politically for the Commission to say yes to some applications in a processing round while saying no to others. In addition, the suggested preferences are to some extent contradictory, since a new entrant could get a new entrant

preference and still lose out to an incumbent that has not missed a milestone in the last five years and has made significant progress toward implementation of its last system. Although the addition of such preferences is supposed to make comparative consideration of the pending applications more objective, the superficial appearance of objectivity would merely mask the deeper arbitrariness of a Rube Goldberg system of internally inconsistent policy fragments.

The second major proposal for salvaging the processing round system is to adopt a mandatory sharing mechanism (namely band segmentation). The Commission describes this proposal as “a means for selecting among mutually exclusive satellite applications in a processing round approach,”<sup>37</sup> but in reality it is a means for *not* selecting among mutually exclusive applicants. Mandatory division of the available spectrum among all applicants has been forced upon the Commission and the applicants in a number of recent processing rounds, because the inadequacies of the processing round system left the Commission no other choice for processing the applications. Nonetheless, it must be admitted that however necessary it might have been as a way out of a bad situation, dividing the available spectrum by whatever number of applicants happen to have filed is completely arbitrary. It is a perfect example of the *problem* caused by processing rounds, not part of the *solution*.

At 2 GHz, for example, the band was divided by the number of applicants – a number that neither the FCC nor any individual applicant could control. In its NPRM, the Commission made a rather perfunctory tentative finding that the amount of spectrum assigned in each direction – whatever it might turn out to be – would be adequate to support an MSS network.<sup>38</sup> When the service rules were finalized a year later, the Commission had increased the divisor by

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<sup>37</sup> NPRM ¶ 78.

<sup>38</sup> *Establishment of Policies and Service Rules for the Mobile-Satellite Service in the 2 GHz Band*, 14 F.C.C. Rcd. 4843, 4857 n.74 (1999) (minimum assignment of 3.88 MHz (35/9)).

one in order to stimulate rural service, but the amount of spectrum to be assigned (again, whatever that might turn out to be) was again deemed adequate.<sup>39</sup> Finally, when licenses were issued *another* year later, the maximum divisor had *decreased* by one but the Commission calculated the spectrum assignments as if the divisor had not changed.<sup>40</sup> It is barely plausible to call this a sharing plan; it is certainly not accurate to call it a selection mechanism. A selection mechanism is precisely what this is not. It is rather an admission that no selection is possible, and generalizing it to cover all satellite licensing would be a very unhealthy development. In addition, the NPRM is silent about how this proposal would work for processing rounds after the first. Is the spectrum to be subdivided further and further, *ad infinitum*, or will there be a genuine spectrum management decision at some point about how many systems ought to be licensed in the available spectrum? A processing queue approach, together with a rulemaking on service rules, would yield a straight answer to that question, unbiased by the number of applications that happen to be on file. A “divide by n” formula does not.

The third and final proposal for reforming the processing round system is the best: elimination of the Commission’s historic policy of treating a very large group of orbital locations as fungible. This suggestion could facilitate a real improvement by making applicants responsible for their own due diligence before they file; for that reason it will probably be opposed by incumbents who have become used to foisting this task off on the Commission.

The best argument against the presumption of fungibility is that it is manifestly untrue. The Commission’s early domsat decisions record the fact that applicants have jockeyed for better orbital locations for more than twenty years, and did so even when orbital slots were

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<sup>39</sup> *Establishment of Policies and Service Rules for the Mobile-Satellite Service in the 2 GHz Band*, 15 F.C.C. Rcd. 16127, 12138 ¶¶ 16-17 (2000) (minimum assignment of 3.5 MHz (35/10)).

<sup>40</sup> *E.g., The Boeing Company*, 16 F.C.C. Rcd. 13691, 13694-95 ¶ 8 (Int’l Bur. 2001).

plentiful, because for any given business plan some orbital locations are better than others. It should be noted, however, that within reasonable limits there is a kernel of truth in the fungibility policy. Specifically, an applicant's business plan will rarely depend upon one single orbital location, and it might well be useful to have applicants state first, second, and third choices for orbital assignments, or to define a range of locations that *the applicant* would consider fungible or at least acceptable. This is something that might be done even in a processing queue system.<sup>41</sup> Still, while elimination (or curtailment) of the fungibility policy would be a step in the right direction, it only helps with applications for geostationary FSS networks. The trouble with processing rounds is much larger than that.

Perhaps the most puzzling thing about the Commission's "streamlining" alternative is that there is no apparent reason to prefer retention of processing rounds, even if reform had better chances of success. Virtually all the purported benefits of the processing round system can be had with a processing queue approach in conjunction with a rulemaking proceeding on sharing and service rule issues. In particular, when a new service is proposed and the primary questions are how many systems can share and by what means, a service rule proceeding allows the Commission to address those questions without defining a processing round. Whenever it is evident that co-frequency sharing is not feasible, the service rules proceeding will allow the Commission to make a reasoned determination of how many systems can be licensed. Importantly, abandonment of the processing round system would allow the Commission to make this determination on its merits, instead of being constrained to reach the pre-ordained

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<sup>41</sup> The FCC Rules allow an applicant to supply multiple orbital positions or even a range of desired positions (*see* 25.114(6)(i)) and this is supported by the proposed Schedule S to Form 312. In the context of a processing queue system, this mechanism would appear to allow an applicant to be highly selective about orbital location at the risk of a greater likelihood of mutual exclusivity, or to

conclusion that the optimum number of systems just happens to be the number of applicants in some processing round.

Taking the example of Ka-band NGSO FSS, there have been two processing rounds. The first one yielded one applicant. The second one yielded six more, which later became five more due to attrition during the proceeding (which is now well into its fifth year). There may be some who believe that the optimum number of NGSO FSS systems in the Ka-band is either one or six, but the vast majority of observers would agree that the optimal number is not at either extreme. Yet the processing round system has given the Commission essentially no choice but to reach one of these conclusions.

The same general argument applies to the Commission's alternative proposal for reforming processing rounds with second-tier selection principles that in theory could allow the Commission to prefer some applications over others. Adopting such principles is easier than applying them, but no matter how hard or easy it is for the FCC to deny one application while granting others, it is certainly at least as easy (and probably easier) for the Commission to do so within a queue, because in a queue there is not even an arguable *Ashbacker* constraint on the Commission's reasoning.

## **VII. THE ANTI-TRAFFICKING RULES SHOULD BE ABOLISHED, FOR ALL OF THE REASONS IN THE NPRM AND THEN SOME**

In the NPRM, the Commission proposes a number of rule changes that are unrelated to licensing processes, and the most important of these is the proposal to eliminate the anti-trafficking rules. Teledesic supports this proposal, which indeed is somewhat overdue in light of

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Continued . . .

be more flexible about orbital location in order to maximize the likelihood that the application can be granted.

the Commission's stated intention to promote healthier secondary spectrum markets. The anti-trafficking rules are of little concern to the larger, entrenched satellite interests, but they are a serious impediment to the efforts of entrepreneurial satellite operators to attract equity investments. In a nutshell, the biggest problem with the anti-trafficking rules is that they turn the act of seeking outside investment into something that places a license at risk.

The NPRM analyzes the economic irrationality of the anti-trafficking rules with keen insight, and that analysis will not be repeated here. However, in addition to the excellent economic analysis in the NPRM, it should also be noted that the anti-trafficking rules pertaining to satellites have never been particularly well drafted. Applicants commenting on proposed service rules lack the incentive to scrutinize anti-trafficking rules very carefully because they typically do not think of themselves as potential traffickers and certainly do not want the Commission to perceive them as such. Nonetheless, the fact that neither the staff nor the industry commenters have ever found it worth their while to get the rules right is perhaps indicative of just how trivial the policies allegedly served by these rules really are.

The satellite anti-trafficking rules all prohibit "trafficking," but they do not define what trafficking is. Historically, the central idea has been that trafficking is a matter of *speculative intent*<sup>42</sup>; to traffic in licenses is to *obtain* them with the intent of selling them rather than providing service to the public.<sup>43</sup> In other words, the anti-trafficking rules developed as a way to discourage speculative applications, not to prohibit profitable sales *per se*.<sup>44</sup> In some more

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<sup>42</sup> *Vogel-Ellington Corp.*, 41 F.C.C.2d 1005, 1009 (Rev. Bd. 1973) ("crucial element" of trafficking is "intent").

<sup>43</sup> *See, e.g.*, 47 C.F.R. § 1.1948(i)(1) (defining ULS trafficking as "obtaining or attempting to obtain an authorization for the practical purpose of speculation or profitable resale of the authorization rather than for the provision of telecommunications services to the public or for the licensee's own private use").

<sup>44</sup> *Crowder v. FCC*, 399 F.2d 569, 571 (D.C. Cir.), *cert. denied*, 393 U.S. 962 (1968).

recent orders adopting satellite anti-trafficking service rules, however, the Commission has thrown the definition of “trafficking” into confusion, suggesting that the term extends not merely to speculation, but to *any* sale of a license for profit.<sup>45</sup> This focus on the value of the consideration exchanged seems to confound trafficking with the Commission’s “no-profit” rules from the broadcast context,<sup>46</sup> and in any event, seems much more restrictive than the Commission’s case law would support. In addition, at least one version of the satellite anti-trafficking rule applies by its terms only to non-geostationary licenses,<sup>47</sup> even though there is no apparent rationale for exempting geostationary licenses and even though the Commission has subsequently applied it to a geostationary system – without then fixing the inconsistency in the rule. And although the case law is to the effect that trafficking is of little or no concern when the transfer of licenses is incidental to a larger bona fide merger of interests, the Commission’s codification of this doctrine stands the applicable case law on its head by allowing the Commission to require *extra* documentation in a merger transaction, proving that the value assigned to the licenses as part of the transaction was the fair market value – an accounting detail of no possible consequence for the public interest. Thus, as they are currently written, the anti-trafficking rules may or may not prohibit certain transactions that are viewed favorably in the case law, may or may not apply in the absence of speculative intent, and may or may not apply at all where geostationary licenses are concerned. It is difficult to escape the impression that many of the people interested in cracking down on trafficking have little or no interest in

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<sup>45</sup> See, e.g., *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission’s Rules to Redesignate the 27.5-29.5 GHz Frequency Band*, Third Report and Order, 12 F.C.C. Rcd. 22310, 22339-40 (1997) (referring to “the selling of a bare license for a profit”).

<sup>46</sup> See, e.g., *Assignment and Transfer of Construction Permits for New Broadcast Stations*, 16 F.C.C.2d 789, 789 (1969).

<sup>47</sup> 47 C.F.R. § 25.145(d).

figuring out (let alone defining) what it is. It is equally difficult to think of a single transaction that gravely threatened the public interest but was disallowed under the anti-trafficking rules.

Although the benefits of the anti-trafficking rules are obscure, the harms are easy to understand. First, and most obviously, the anti-trafficking rules make every transaction much more complicated even where no speculative intent is involved, and they require extensive Commission review of what is often a complex web of commercial transactions. This complicating effect of the rules is only exacerbated by the fact that various exceptions to the rules provide ways around the prohibition. Second, assuming that the rules actually prevent anything at all, they prevent the flow of capital to satellite projects that desperately need it. And third, again assuming that the rules actually prevent anything at all, they prevent spectral and orbital resources from moving quickly to the entity that values them most highly and can use them for the greatest public good.<sup>48</sup> With no perceptible public benefit and a number of very real drawbacks, the anti-trafficking rules are unsupportable and the proposal to abolish them is, in colloquial terms, a “no-brainer.”

#### **VIII. THE COMMISSION'S TECHNICAL INFORMATION PROPOSALS SHOULD BE ADOPTED BUT MUST NOT BE ALLOWED TO PRECLUDE INNOVATIVE APPLICATIONS.**

The NPRM collects a number of technical information proposals, as well as a proposal for clarification of the full-frequency re-use regulations, and suggests that these measures may be related to the processing reforms the Commission proposes elsewhere. Teledesic generally supports this group of Commission proposals. In particular,

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<sup>48</sup> See generally *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, 15 F.C.C. Rcd. 24203 (2000).

- Teledesic supports the proposal to include Schedule S as part of FCC Form 312, in order to collect most satellite application information in a standardized manner.<sup>49</sup> This proposal will expedite the review of applications, make it easier to ensure that all of the necessary information is provided, and facilitate subsequent interference analyses by making the most important technical information available in a simple, easy-to-follow format.
- Teledesic supports the expansion of the Schedule S to standardize more space station information – specifically, more detailed orbital parameters for NGSO systems, the harmonization of information requirements for all NGSO applications, and the collection of additional information on digital and analog carriers and TT&C carriers.<sup>50</sup> Teledesic does have concerns, however, about the proposal for requiring all space station antenna beams to be provided as antenna gain pattern contour diagrams in the .gxt format. This format lends itself quite well for GSO systems with fixed-Earth beams, but is not optimal for NGSO systems where gain patterns (gain as a function of off-axis angles) are preferred. Steerable satellite antenna beams providing constant footprint size by beam shaping have different gain contours on the Earth’s surface depending on where they are pointed, so it is preferable to provide gain patterns. Therefore, this type of presentation should also be retained as an option.
- Similarly, while Teledesic supports the Commission’s proposal for standardizing as much as possible the information collection process for satellite applications,

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<sup>49</sup> NPRM ¶ 89.

<sup>50</sup> *Id.*

there is a need to allow applicants some flexibility in deviating from the standard forms. Otherwise, some satellite applications that do not perfectly fit the pre-defined format would be difficult to accommodate. To this end, all forms should include a field that allows referencing either a section of the applicant's narrative or an attachment to the application. This simple step will allow applicants to provide additional information on their proposed satellite network and have this information related to the basic technical elements in a manner that makes their association simple and easy to find.

- Teledesic does not object to providing PFD calculations for a range of angles (5, 10, 15, 20 and 25 degrees), but believes it would be unrealistic to think that this requirement will discourage any applicants from filing frivolous applications.<sup>51</sup> Performing such calculations is not , and any applicant can do this, regardless of the seriousness of the proposal.
- Teledesic supports the Commission's proposal to clarify its full frequency reuse policies. The language contained in Section 25.210(d) developed for the Ka-band is more general than the text contained in Sections 25.210(e), (f) and (g) as it allows licensees to re-use the same frequencies on multiple beams and not only with dual polarization per beam. Therefore, the latter texts should be revised based on the former as proposed by the Commission. Teledesic does not have any firm views on whether these should also be applied to the

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<sup>51</sup> NPRM ¶ 91.

extended C-band and Ku-band. Whatever decision the Commission takes on these two issues, it is imperative that the wording in 25.210(e), (f) and (g), or their replacement, be clarified because currently these three sections do not explicitly exclude the Ka-band. Section 25.210(e) forces all FSS networks to use dual linear polarization, while section 25.210(d) allows either linear or circular polarization.

Teledesic provides specific suggestions and comments on the proposed Schedule S forms as provided in Attachment C of the NPRM. Teledesic suggestions are provided in Annex 1.

#### **IX. TELEDESIC GENERALLY SUPPORTS THE COMMISSION'S PROPOSALS REGARDING FINANCIAL QUALIFICATIONS, MILESTONES, AND REPLACEMENT SATELLITES**

In addition to its proposals for licensing reform and its very important proposal to abolish the anti-trafficking rules, the Commission makes a number of other proposals that affect the licensing process regardless of whether processing rounds or processing queues are used. Teledesic generally supports the Commission's proposals regarding financial qualifications, milestones, and replacement satellites.

##### **A. Financial Qualifications and Milestones.**

The Commission rightly proposes to eliminate existing financial qualification standards. Their lack of predictive power has been recognized for at least six years, and the successive waivers that are granted in nearly every case make it pointless to pretend that they are still the rule. Reason and candor seem to compel their elimination rather than increasingly routine waivers.

In addition, the Commission is also right to point out that milestones serve many of the same purposes as financial qualifications. In light of this congruence, moving toward a milestone-based approach seems to be a reasonable alternative for achieving many of the policy goals at which the financial qualifications standards are aimed.

Unfortunately, the milestone system has been far from perfect as well. Problems in administering the first milestone, commencement of construction, have been symptomatic of the larger problem. The rules require commencement of construction, and the cases have long held that construction is commenced by the signing of a "non-contingent contract." However, all contracts have contingencies; indeed it might be said that the point of any contract is to specify certain contingencies and provide the manner in which they are to be handled.

In addition, Commission review of confidential commercial information has not been a success story. The protective orders that are routinely imposed are not very protective when the information is truly sensitive. And although the Commission has means at its disposal for reviewing these sensitive materials without disclosing them to a licensee's competitors, it seems not to have the will to use them. Unless the Commission is willing to improve its handling of confidential commercial information significantly, Teledesic opposes any further expansion of the number of commercial documents that must be filed with the Commission (such as the automatic submission of a construction contract on or before the first anniversary of the granting of the license). Rather than requiring the submission of confidential corporate documents, the Commission should explore the use of certifications by the licensee that certain

very specific requirements have been met.<sup>52</sup> This approach seems preferable both as a means of preserving confidentiality and as a means of conserving administrative resources.

The Commission has for some time held NGSO licensees to a tighter milestone schedule than it has imposed on GSO applicants, and the Commission is right to question this practice.<sup>53</sup> Teledesic finds it difficult to understand why NGSO licensees should be required to commence physical construction six months faster than GSO licensees, especially in light of the greater degree of uniformity among GSO projects and their long history, which should reduce the need for customized design decisions. Even worse, the generic milestones proposed in the NPRM require the launch of the first two NGSO satellites a full eighteen months faster than a GSO licensee is required to launch just one. An NGSO system comprising tens or hundreds of satellites would need to bring them all into use within six years whereas a GSO “system” of just two satellites would benefit from the same six-year period. Indeed, this may be an appropriate time to question why GSO licensees are permitted to pursue construction of multiple satellites *seriatim*, rather than being constrained to build each satellite on the same timetable and adjust the number of applications filed accordingly.

More broadly, there is good reason to question whether the Commission can maintain a set of generic, “one size fits all” milestones. The public interest is certain to be better served if the Commission develops milestones in each set of service rules and/or in the license conditions it adopts for each license. This would permit some flexibility to tailor the milestone schedule to the specific application and the state of the allocation and technology. This

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<sup>52</sup> As Teledesic has noted elsewhere, such certifications would tend to be highly reliable because all licensees owe a duty of candor to the Commission, and in any event individuals who knowingly make false statements to an agency of the federal government can be prosecuted under 18 U.S.C. § 1001, even if the statement is not included in a formal affidavit signed “under penalty of perjury.”

<sup>53</sup> NPRM ¶ 103.

flexibility is essential to cover exceptional cases. This does not necessarily mean that there should not be a set of generic milestones; it means only that as new services are proposed the Commission must be willing to examine all the facts and circumstances before imposing the generic standard in any particular case.

It may well be that the proposal to require expenditure of a certain amount of money each year<sup>54</sup> is preferable to the current milestone system, but Teledesic looks forward to reviewing any other creative proposals received in the comments.

The Commission is right to think that enforcement of milestones would be easier if there were an incentive for companies to turn in their licenses voluntarily without need for revocation proceedings. As the NPRM suggests, this would be a very useful side benefit of the Commission's proposal to limit the number of applications plus unbuilt systems in the queue at any given time.

**B. "Grant-Stamp" Approval of Replacement Satellites and Speedy Denial of Meritless Recon Petitions in Licensing Matters.**

Teledesic notes with interest the Commission's proposal to adopt a "grant stamp" procedure for replacement satellite applications. This proposal seems generally to be a sensible way of reducing waste and delay in "easy cases," and Teledesic supports it. However, if the Commission is truly interested in reducing the amount of staff time spent on easy cases, and relieving its licensees of the concomitant red tape, an even more consequential reform proposal would be to "deny-stamp" meritless petitions for reconsideration of licensing decisions.

This is a sore subject for Teledesic, because Teledesic's original license, granted more than five years ago, is still subject to a petition for reconsideration. Even the granting of a

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<sup>54</sup> NPRM ¶ 104.

modified license two years later did not resolve the pending recon petitions; indeed, it merely spawned others, and now those 1999 petitions remain pending. The Commission again modified Teledesic's license in 2001 to impose construction milestones, and once again that modification resolved none of the pending petitions for reconsideration but spawned another. Sadly, Teledesic's experience in this regard seems to be the rule rather than the exception. Many observers familiar with the Commission's general practice in this area might be surprised indeed to learn that the Communications Act specifically requires the Commission to rule on petitions for reconsideration of virtually all satellite licenses within ninety days.<sup>55</sup> This is one area where the Commission can significantly improve its licensing processes simply by adhering to the statutory deadline.

Allowing meritless recon petitions to languish for so long is an obvious waste of administrative resources. On the day a recon petition is filed, the author of the challenged order can read the petition once and reach an immediate conclusion about (1) whether any new argument has been raised; and if so (2) whether the new argument compels a different result. A "DENIED" stamp could be employed to dispose of the petition quickly at that time. At most, a one- or two-paragraph order could be issued with at most a single day of staff time. But as the petition ages, the issues recede from memory and the recon petitions become almost as big a drain on staff resources as the original orders. To take Teledesic's example once again, there is probably no one on Earth, including undersigned counsel, who has any idea (without peeking) what issues were raised in the recon petitions that were filed in response to Teledesic's 1997 license. It is doubtful whether all the pleadings are still available in the

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<sup>55</sup> 47 U.S.C.A. § 405(a) (2001).

reference room. Whether a recon petition has merit or not, prompt disposition takes much less staff time than slow disposition.

There is another source of administrative waste as well: the effect of a recon petition under section 1.65 of the Commission's rules. That rule requires that all "pending application[s]" on file with the Commission be kept substantially complete and accurate in all significant respects.<sup>56</sup> Importantly, however, the rule expressly provides that for purposes of section 1.65, a system proposal is still "pending" even after it is granted as long as it is subject to a petition for reconsideration.<sup>57</sup> Thus, one effect of allowing recon petitions to languish indefinitely at the Commission is to require licensees to continue providing information about matters that are not normally deemed worthy of being brought to the Commission. This is especially true of corporate financial information, which as the Commission knows is the sort of information that is frequently subject to requests for confidentiality. Thus, allowing recon petitions to pile up for years without staff attention actually increases the number of subsequent filings a licensee must make, and at least some of those filings may give rise to new requests for relief, each with their own pleading cycle and each requiring a new memorandum opinion and order. Given the Commission's efforts to streamline its own processes, as well as its constant concern to ensure that licensees are moving quickly to attract the necessary capital and deploy their systems, the Commission's longstanding failure to dispose of recon petitions promptly is an obvious area for improvement.

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<sup>56</sup> 47 C.F.R. § 1.65(a)

<sup>57</sup> *Id.*

Respectfully Submitted,

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## **Annex 1 to Teledesic Comments on NPRM**

This annex provides detailed comments on the Commission's proposals contained in Attachment C to the NPRM. These comments are grouped for each page of the Schedule S form and a reference to the specific field being addressed is provided. As mentioned in the main text of our response, we believe that each page should contain one additional field which would provide an optional reference to specific sections or attachments of the application. In cases where additional details are to be furnished, there would be a cross-reference between the Schedule S and the corresponding narrative in the application.

### FCC 312 Schedule S – Page 1

**S2(d) – Nature of service:** The Commission should clarify its intent as it is not described in Section 25.114. Is this the same as the “Nature of Service” defined in Section C.4 of Appendix 4 to the ITU Radio Regulations?

**S3(g,h,i) – Range of orbital arc and reasons thereof:** Teledesic believes it is prudent to continue allowing applicants to provide alternate orbital locations in item **S3(b)** and reasons for the orbital location selection in item **S3(c)** as discussed in section VI of our response, but believes the fungibility policy should be eliminated. Consequently we believe that the range of orbital arc and its reasons are not necessary.

### FCC 312 Schedule S – Page 2

**S4(d) – Orbit Epoch Date:** The purpose of this field is not clear and in any case this requirement does not apply to non-Earth-synchronous NGSO systems. Therefore, at a minimum, we anticipate that this field would be optional and should be so stated.

**S4(o) – Active Service Arc Range - Other:** The intent of this field is not understood.

**S6(c,d)** – Peak gain of beam: It should be noted that some steerable satellite antenna beams constantly adjust the beam shape in order to maintain a constant footprint on the ground. Therefore the peak gain at the sub-satellite point (NADIR) is not necessarily the same as when the beam is at the edge of the service area. It is understood that these fields relate to the maximum gain under all conditions of beam pointing.

**S6(i)** – Polarization Alignment: This applies only to linearly polarized beams and should be so stated in a footnote to the table.

**S6(l)** – Output Power: It is understood that this is the output power of the satellite TWTA (or SSPA) before any transmission losses to the antenna (field **S6(k)**). It might be more obvious if this was moved ahead of field **S6(k)** and these two fields re-numbered.

**S8(g-k)** – Maximum Power Flux-Density Levels: It is proposed to calculate these levels in a 4-KHz band, however, the Regulations stipulate different reference bandwidths depending on the frequency band, for example, using a 1-MHz reference bandwidths above 15 GHz. Therefore, it is proposed that the reference bandwidth be removed from the main heading and added as a new field – **S8(l)** Reference bandwidth

There is duplication in the definition of typical emissions (page 7) and the specific carrier characteristics (pages 8 and 9) that should be avoided. Any relevant information, with the exception of an “ID field” that connects two tables, should only appear in a single table. Also, the necessity of breaking down carrier information into two tables (analog and digital) is unclear as many of the fields are identical and, at least in the case of analog carriers, many fields will be left blank because they are only applicable to one type of carrier (FDM, TV, SCPC). The two carrier modulation tables (**S12** and **S13**) could be combined into one table. Regardless of the

decision on this suggestion, Teledesic believes that the Emission characteristics (table **S11**) should contain only that information on transmission characteristics of emissions which is transponder specific and link budget related, while the (two) modulation table(s) should contain all characteristics of carriers that do not change regardless of which transponder is used to carry this traffic. Specific examples are provided below.

FCC 312 Schedule S – Page 7

**S11(c)** – Emission designator: the emission designator can be used as the “emission ID” to search on the other tables (**S12** and **S13**). If it is more convenient to use a simple numbering scheme to connect multiple tables, this field should be labeled “Emission ID” and the emission designator should be contained only in the specific carrier information/modulation table(s).

**S11(d)** – Emission bandwidth: This should be provided only in the specific carrier information/modulation table(s).

**S11(e,f)** – Modulation ID: Only a single code (or two columns if it is necessary to retain separate analog and digital modulation tables) should be used to connect the emission table to the modulation table(s). See also the comments on item **S11(c)**.

**S11(h)** – Energy dispersal bandwidth: This should be provided only in the specific carrier information/modulation table(s).

**S11(n)** – Power-Flux Density: The PFD calculations are provided for the worst-case emissions in Table **S8**. It seems overly cumbersome to produce PFD calculations for each combination of carrier types and transponders (beam/channels) and this information is superfluous.

FCC 312 Schedule S – Pages 8 and 9

Unless specifically noted, the following comments apply to both Tables **S12** and **S13**.

**S12/13(a) – Modulation ID**: As mentioned under **S11(c)**, there should be only one simple connector ID field between the emission table (**S11**) and the modulation table(s). Also, the need for a separate analog and digital table is not obvious.

**S12/13(b) – Emission designator**: If this is used as the modulation ID, then this item is redundant with **S12/S13(a)**.

**S12/13(d) – Carriers per transponder**: This may vary depending on the bandwidth of the transponder and the power available, so it is not a basic characteristic of the carrier. It should be moved to the emission table (**S11**).

**S12(j)/S13(p) – Total C/N performance objective**: If this relates to performance of the carrier in clear-sky conditions then it is a function of link budget parameters and should be included in the emission table (**S11**). If on the other hand, it refers to the minimum C/N that this type of carrier can support (threshold C/N) then it rightfully belongs in this/these table(s).

**S12(k)/S13(q) – Single-entry C/I objective**: This would be more relevant to the emission table (**S11**) as it is directly related to the link budget performance. In the case of time-varying interference, such as those cases involving NGSO satellites, a single C/I value might not be relevant as it needs to be related to a certain time percentage. The fade margin and availability objectives for the application of Recommendation ITU-R S.1323 might be more relevant. However, this can be provided in an Annex.

The Commission is kindly requested, when adopting Schedule S, to make the forms available in simple and commonly-available software that also allows importing and exporting to other programs. Teledesic would suggest the use of Excel spreadsheets for capturing and storing the information as the software is available to everyone and is simple to use. The database information is relatively simple in its linkages and is thus well suited to spreadsheets. The data would be easy to maintain and would provide the added benefit of allowing direct data manipulation for interference calculations. The Commission is urged not to use complex

relational databases, and not to provide this information in acrobat (.pdf) files that are excellent for printing but do not permit manipulation of the data.

In conclusion, the Commission should be commended for preparing a logical and simple structure for capturing this information. Specifically, the use of multiple tables linked, when necessary, by simple ID codes (e.g., beam ID, channel no., transponder no., carrier ID, etc.) avoids many of the duplication problems that are contained in the ITU Appendix 4 Forms of Notice.