disasters. Such service lapses and system unreliability could result in catastrophic consequences to the health and safety of the public. API reminds the Commission that the original impetus for private microwave allocations was industry's need for heightened system reliability.20/ In the interim since the Commission's original OFS allocation decision, the reliability of service provided through the public telephone network has not improved to any significant degree.21/ Clearly, the public interest will not be served by placing essential communication functions at the mercy of commercial carriers.

22. Further, satellite technology alone does not have sufficient capacity to meet the needs of all displaced users. Fiber optic systems are unavailable throughout many areas of the nation that are now dependent on 2 GHz spectrum to protect the public. Even if satellite and fiber optics could provide a technically adequate replacement for 2 GHz spectrum, therefore, sufficient capacity is not now

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20/ See In the Matter of Allocations of Frequencies in the Bands Above 890 Mc., FCC Docket No. 11866, 27 F.C.C. 359 (1959).

21/ See "Asleep at the Switch? Federal Communications Commission Efforts to Assure Reliability of the Public Telephone Network," Report of the 102d Congress, 1st Session, House Report 102.420 (December 11, 1991).

available to meet the needs of petroleum and natural gas companies and other users.

23. The services provided by petroleum users through the 2 GHz OFS spectrum allocation offer a major source of security for the public and environmental safety. API must, therefore, question the Commission's determination to allocate valuable spectrum to satisfy the undefined requirements of a very nebulous collection of new technologies. More perplexing is the Commission's underlying judgment that the societal significance of the services proposed for the band 1850-2200 MHz outweigh the value of protecting both the public and the environment. To date, while the Commission has continued to tout the potential usefulness of emerging technologies,[22/] neither the Commission nor new technology proponents have made an empirical showing that a significant pent-up demand for these new services exists or will materialize in the near term. Moreover, should the Commission and/or new technology proponents be able to demonstrate such a demand, the nature of the proposed new services is "convenience-oriented" and not vital to the public health and safety. API asserts, therefore, that the Commission's instant proposal is in

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22/ See Notice, pp. 3-4.

violation of its special statutory obligation to allocate spectrum in a manner that promotes "the safety of life and property." 47 U.S.C. § 151.[23/] While the Commission is not required to grant users with public safety responsibilities an absolute right to a particular spectrum home, it is clear that the statute requires the FCC to give such uses an allocation priority over services which are "purely commercial or which are more in the nature of a convenience or luxury."[24/] The instant proposal is based on inadequate analysis and erroneously assigns safety-oriented uses an unacceptably low allocation priority. Such action clearly violates the Commission's responsibilities mandated under the Communications Act.

23/ Since the addition of this specific language to the Act in 1937, subsequent Congresses have repeatedly buttressed and elaborated upon the Commission's duty to award public-safety-oriented uses the highest allocation priority. See e.g. S. Rep. No. 191, 97th Cong., 2d Sess. 14 (1981), reprinted in [1982] U.S. Code Cong. and Admin. News 2237, 2250 . . . "radio services which are necessary for the safety of life and property deserve more consideration in allocating spectrum than those services which are more in the nature of a convenience or a luxury." See also House Rep. No. 98-356, 98th Cong., 1st Sess. 27 (1983), Reprinted in [1983] U.S. Code Cong. and Admin. News 2219, 2237 . . . "public safety consideration should be a top priority when frequency allocations are made."

24/ National Association of Broadcasters v. FCC, 740 F.2d 1190, 1214 (1984).

C. International New Technology Developments Do Not Compel Reallocation of the Bands Proposed by the Commission.

24. The Commission suggests that the impetus for its spectrum allocation proposals relies significantly on "international developments." More specifically, the Commission notes that several forms of digital audio services as well as personal communications services are under development or being considered in Europe, Canada and Japan.25/ Further, the Commission notes that Europe and Japan are moving to allocate spectrum between 1 and 3 GHz for mobile services and that the 1992 World Administrative Radio Conference (WARC) has addressed the allocation of spectrum in this frequency range for new mobile services.

25. The Commission operates under the belief that an identical domestic spectrum allocation is required in order to ensure equipment interoperability and convenience for international travelers. The Commission also presumes that a common international frequency allocation for new technologies will spur the manufacture of new technology

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25/ Notice p. 4.

hardware devices within the United States for export overseas.26/

26. Regardless of how desirable an international transmission standard for PCS, digital audio broadcasting and other technologies may be, enhanced interoperability of such technologies on an international basis is highly unlikely to be fostered by the Commission's decision to create a "common spectrum allocation." It is an oversimplification to believe that a common frequency allocation will provide international interoperability. At this time, a significant divergence of transmission methods for mobile technologies exists throughout the world. Further, software protocols which control mobile communications hardware vary widely in the international marketplace, and it appears that this trend will continue. For example, the United Kingdom has adopted CT-2 which uses the CAI signalling protocol. However, in other areas of Europe and the Far East, the advanced SS-7 protocol is under

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26/ API is puzzled as to why the Commission points to the WARC actions as a basis for the proposed reallocation, since the U.S. specifically took exception to wholesale reallocation of 1-3 GHz spectrum to exclusive mobile uses, ostensibly to protect domestic fixed operations currently conducted in the 1-3 GHz spectrum range. See Addendum and Corrigendum to the Final Acts of the world Administrative Radio Conference (WARC-92), Malaga - Torremolinos, Spain - 1992, Note 746-A.

consideration. Further, the European Telecommunications Standards Institute is now working to establish a different standard which it hopes eventually will be adopted in portions of Europe. Accordingly, even if a common international frequency allocation could be adopted, international use of a single interoperable equipment form for the proposed services is highly unlikely.27/

27. This situation is further complicated since numerous discrete frequency bands exist within the 1-3 GHz frequency range. It is not certain which of those specific bands will be allocated by different nations to the various new technologies proposed. Accordingly, if international considerations are paramount in the Commission's analysis, it is premature to make an early allocation decision assigning specific bands within the 1-3 GHz range for provision of new services since the eventual spectrum choices of other nations may differ.

27/ The truth of this statement is demonstrated by the fact that in the United States where a common frequency allocation for the cellular telephone service was adopted, differing equipment modulation and signalling protocol standards make nationwide interoperability of cellular equipment somewhat problematic. Certainly, it is beyond belief that the widely divergent international community will succeed at complete standardization for new technologies due to a common spectrum allocation when a uniform spectrum approach within the United States alone has been insufficient to insure interoperability.

28. It is also highly unlikely that the United States will become a major producer of the operating hardware by which new technology services may be provided. While American ingenuity in the design and implementation of new technology is undisputed, once the developmental stages of technology are complete, manufacturing frequently moves offshore where the costs of labor are considerably lower. For example, as the Commission and Congress are well aware, very little consumer television equipment is manufactured domestically in this era. Accordingly, the simple belief that a common frequency allocation for such equipment will enhance American manufacturing and exports is not grounded in fact. While new technology deployment may eventually enhance the lifestyle and productivity of limited segments of the U.S. population, it is extremely unlikely that it will stimulate manufacturing activity, create production-oriented employment opportunities, or have a significant impact on the U.S. balance of trade.

III. POLICY ISSUES RELATING TO EXISTING MICROWAVE SYSTEMS

D. All Existing Private Microwave Use Should Be Grandfathered Indefinitely.

29. If, despite other available, less disruptive alternatives, the Commission proceeds with reallocation of the 2 GHz band for new technologies, it must take steps to protect existing systems from disruption. The grandfathering scheme set forth by the Commission in its Notice of Proposed Rule Making in this proceeding suggests that non-public safety systems licensed in the band 1850-2200 MHz would be grandfathered for a period of ten or fifteen years from the date spectrum is allocated for emerging technologies. Conversely, public safety systems would be grandfathered indefinitely. The Commission proposed this bifurcated grandfathering provision to "avoid any disruption of police, fire and other public safety communications."28/ However, API urges the Commission to recognize that the systems operated by other licensees in the band 1850-2200 MHz also carry essential public safety-related communications. The consequences of abrupt disruption of these communications would also, in many cases, be extremely severe.

28/ Notice, paragraph 25.

30. Under the planned grandfathering arrangement suggested in the Notice, private microwave and common carrier licensees of systems in the band would be subject, at the end of the grandfathering period, to immediate displacement by an encroaching new service. This arrangement will necessarily impose a great deal of uncertainty on existing licensees as to continued use of their systems. Consequently, there will be great pressure placed upon existing licensees to vacate the spectrum before the ten or fifteen year grandfathering period expires.

31. API urges the Commission to recognize that the uncertainty surrounding the duration of continued use is counterproductive in many respects. Should the emerging technologies not develop to the extent projected, the grandfathering scheme proposed by the Commission will have caused considerable uncertainty and expense, as existing licensees struggle to decide whether to relocate their systems to other frequency bands. To illustrate, when the Commission allocated the 12.2-12.7 GHz band for the Direct Broadcast Satellite (DBS) Service, it created a limited five-year grandfathering period for existing users of the band. At the end of that five-year period, there had been no significant development of the DBS Service. Nonetheless,

microwave users in the band were subjected to the dilemma of whether they should relocate their systems to the reaccommodation spectrum designated by the Commission before expiration of the five-year primary status, or whether they should simply continue to use the band until their systems were actually displaced by DBS.

32. Ultimately, most licensees of systems at 12.2-12.7 GHz apparently decided not to relocate their systems to other frequency bands.29/ However, even today, these users are subject to immediate displacement should the DBS Service develop into a viable business activity. With this as background, API urges the Commission not to impose a limited period of grandfathering for existing users of the 1850-2200 MHz band. If the emerging technologies really do enjoy the consumer demand that is anticipated by the Commission, then proponents of these services should have sufficient capital resources to successfully negotiate for the relocation of existing microwave systems. The ultimate relocation of microwave systems is one area in which API

29/ Some licensees, of course, did relocate their systems to other frequency bands, often at great expense. Exxon Communications shifted two if its 12.2-12.7 GHz hops to the 2 GHz band at a total cost of $600,000 for the relocation effort. Ironically, this system has now been placed in jeopardy by the proposal to reallocate 2 GHz for emerging technologies.

strongly believes that the marketplace will be the most efficient mechanism for ensuring timely and efficient relocation of services. However, in order for the marketplace to work effectively, it is imperative that at a minimum existing microwave system licensees be granted indefinite primary status.30/ Otherwise, existing users will enjoy very little bargaining leverage as the end of the ten or fifteen year grandfathering period approaches. Further, existing users, particularly those in rural areas, will face considerable uncertainty regarding their continued use of the spectrum as the grandfathering period ends. The only reasonable resolution of this uncertainty is for the Commission to grant existing users indefinite primary status, thereby ensuring that all microwave users will have some control over the fate of their systems.

33. As a group, private microwave system licensees are business-oriented enterprises. These enterprises make

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30/ API is convinced that, if all existing microwave systems are grandfathered indefinitely, the process of negotiations between PCS proponents and existing users of the spectrum can proceed in a manner that is equitable to all parties concerned. In individual cases in which the PCS proponent and a microwave licensee are unable to reach agreement on the appropriate level of reimbursable relocation costs, the Commission's alternative dispute resolution procedures would appear to offer a practical solution. See Notice of Proposed Rule Making, GC Docket No. 91-119, 57 Fed. Reg. 20238 (May 12, 1992).

budgeting and economic decisions based on a sophisticated examination of costs and benefits. They do not "thirst" to derive windfall profits from the relocation effort. Should a PCS proponent propose a negotiation in which the benefits to existing users are at least comparable to the costs of the relocation effort, then it is in the economic and operational interest of the users to relocate to replacement spectrum. Existing users are not wedded to use of the 1850-2200 MHz spectrum simply because they were there first. They are wedded to use of this band to the extent that: (a) it may be the only band capable of satisfying legitimate reliability requirement for long-distance communications, and (b) as a practical matter, the costs imposed by the relocation effort will be more costly to OFS users than they can reasonably afford to pay. The Commission can expect, however, that in those instances where there is truly a legitimate and useful alternative to the 1850-2200 MHz band, and where the cost to the existing licensees of moving is minimal, then relocation will occur to the extent necessary to accommodate emerging technologies. For this process to work effectively, however, a fundamental requirement is that all existing users be grandfathered indefinitely.

E. The Commission Must Provide Sufficient Flexibility for Modifications to Existing Microwave Stations.

34. API notes that the Commission's Notice made no provision for modification of grandfathered stations or assignments and transfer of these facilities. Should the Commission not formally permit certain modifications to systems, licensees will jeopardize their primary status simply by making relatively innocuous changes to a station. The Commission has rectified this omission, to a certain extent, with its Public Notice of May 14, 1992 on the subject of "Two Gigahertz Fixed Microwave Licensing Policy." In this Public Notice, the Commission stated that a number of changes, including changes in ownership and control of stations, can be made by licensees without jeopardizing the primary status of the system. API believes the changes specified in this Public Notice are appropriate and urges the Commission, when adopting final rules in this proceeding, to specifically provide the flexibility for licensees to make such changes without jeopardizing primary status.

F. PCS Will Be An Urban Phenomenon Only and the Allocation Should Reflect This Characteristic.

35. There seems to be widespread agreement that the PCS phenomenon, to the extent it develops, will be largely confined to urban markets.[31/] Should the Commission proceed with the allocation of 1850-2200 MHz for emerging technologies, API believes it is imperative that the allocation scheme adopted by the Commission accommodate the legitimate needs of emerging technologies in urban areas while minimizing, to the extent possible, the detrimental impact upon existing users. In view of the anticipated urban market for emerging technologies, API strongly urges the Commission to preserve the use of the band 1850-2200 MHz for critical point-to-point microwave applications in rural areas. The Commission has used an urban/rural dichotomy as a valid regulatory strategy in other services.[32/] API believes that such a dichotomy could be successfully employed with respect to the allocation for emerging technologies. Confining the PCS allocation to urban areas would have the effect of allowing essential

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31/ See, for example, the Comments of LOCATE in Gen. Docket No. 90-314 which suggest that urban commuters, particularly those employing mass transit, will be a major user of PCS services.

32/ The release of 900 MHz SMR frequencies for urban markets (Designated Filing Areas) and the allocation of 470-512 MHz for land mobile use provide two examples.

public safety-related microwave services in rural areas to continue without disruption, while encouraging the immediate development of PCS. For example, the Commission could prescribe that the allocated spectrum would be available for PCS technologies within fifty or seventy-five miles of the centers of major urban markets.

IV. CONCERNS OF PROCEDURE AND ADMINISTRATIVE LAW

G. The Commission is Required to Consider All Available Alternatives.

36. The Commission's failure to fully investigate the feasibility of using federal government spectrum or the 2500-2690 MHz band for emerging technologies as a new home for displaced 2 GHz users could render the entire rulemaking proceeding unlawful under the APA, 5 U.S.C § 551. The APA directs that agency action shall be deemed unlawful if it is "arbitrary, capricious, an abuse of agency discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). To meet this standard, the Commission is required to scrutinize all reasonable alternatives to its chosen course of action. A court will "look carefully at the Commission's reasoning to ensure that all relevant factor and available alternatives were given adequate consideration in the course of the rulemaking proceedings."

United Church of Christ at 1426, See also, Greater Boston Television Corp. v. FCC, 444 F.2d 841, 850 (D.C. Cir. 1970), cert. denied, 403 U.S. 923 (1971).

37. The House Committee Report on the federal spectrum reallocation legislation concluded that "many of the frequencies reserved for government licenses are under-utilized or inefficiently used."[33/] Moreover, the entire thrust of the pending reallocation legislation is that underutilized government spectrum can -- and should -- be made available for emerging technologies. Nevertheless, the Commission has failed to make any meaningful attempt to assess the viability of these alternatives.

H. The Commission's Failure to Compare the Benefits of 2 GHz OFS Operations Against Specific Emerging Services Offends Notions of Due Process and Administrative Fairness, and it Precludes Reasoned Decision Making.

38. Even if the Commission continues to insist that the 2 GHz OFS spectrum is best suited for emerging technologies, any decision to reallocate the spectrum for that purpose will raise serious legal questions. The Commission's basic proposal -- to displace the 2 GHz OFS

33/ See House Comm. on Energy and Commerce, Emerging Telecommunications Technologies Act of 1991, H. Rep. Now. 113, 102d Cong., 1st Sess. 14 (June 18, 1991).

licensees in order to create a spectrum home for yet-to-be-defined technologies -- is procedurally flawed for two reasons. First, the proposal deprives incumbent licensees of any meaningful opportunity to compare the benefits of their services against specific future services, thereby offending notions of due process and administrative fairness. Second, by omitting such a comparison from the inquiry, the Commission is precluded from making a rational decision as to whether existing 2 GHz services better serve the public interest than future ones.

1. Due Process and Administrative Fairness Concerns

39. Due process requires the Commission to afford all licensees who face the loss of their spectrum a meaningful opportunity to argue for preserving those interests. This right to a meaningful proceeding inures whenever an agency proposes to terminate a governmental entitlement, regardless of the nature of the entitlement. Bell v. Burson, 402 U.S. 535, 91 S.Ct. 1586 (1971). Of course, the due process requirements are less stringent in the context of a rule making proceeding than they are in other types of proceedings. Nonetheless, parties interested in a rule making must have a meaningful opportunity to criticize and

comment on an agency's proposals. Florida Power & Light Co. v. United States, 846 F.2d 765, 771 (D.C. Cir. 1988). Indeed, the courts have long held that, under the APA, agencies must craft their rule making proceedings so as to foster meaningful participation. See Home Box Office, Inc. v. FCC, 567 F.2d 9, 36 (D.C. Cir. 1977) (an agency's views must be "concrete and focused . . . so as to make criticism or formulation of alternatives possible").

40. By proposing to reallocate the 2 GHz band to emerging technologies generically, the Commission deprives existing 2 GHz licensees of such a meaningful opportunity. For an opportunity to comment to be meaningful, all essential elements of the pending decision must be open for consideration. See Bell, 91 S.Ct. at 1591. In this reallocation proceeding, however, the Commission has eliminated from consideration the most essential element -- namely, the types of services that might supplant OFS use of the 2 GHz band.34/

34/ The Commission's listing of several conceivable occupants of the 2 GHz band does not cure this defect. The Notice states:

> The Commission presently has pending before it a number of requests for new services and technologies for which sufficient spectrum is unavailable. These requests include: 200 MHz for new personal communications services (PCS); 40 MHz

(continued...)

41. The Commission's proposal to reallocate spectrum for undefined services is unprecedented in this regard. Indeed, a review of the Commission's previous reallocation proceedings demonstrates that, in each instance, the Commission has deemed it essential to weigh the relative costs and benefits of preserving an existing service against the anticipated benefits of specific, alternate services. In the 1960s, in Docket No. 13847, the Commission transferred spectrum from Class A Citizens to the Private Land Mobile Radio (PLMR) services, but only after determining that there was a pressing need for additional

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34/(...continued)
for data PCS; 33 MHz for generic mobile-satellite service; 70 MHz for a digital audio broadcasting service; and 33 MHz for low-Earth orbit satellites. Notice at ¶ 4 (footnotes omitted).

Of the services listed, the Commission only suggests actually putting PCS in the band. Indeed, the other services are targeted for other portions of the spectrum. The Commission already has proposed to place the mobile-satellite service in the 33 MHz from 1530 to 1544 MHz and from 1626.5 to 1645.5 MHz; it has proposed to place digital audio broadcasting in the 70 MHz from 1460 to 1470 and 1470 to 1530 MHz; and low-Earth orbit satellite operations are proposed for lower bands. See, e.g., Tentative Decision, ET Docket No. 91-280, 7 FCC Rcd 1625 (1992) (tentatively granting a Pioneer's Preference for development of a LEO system in the VHF bands).

More importantly, however, the Commission states that any future use of the 2 GHz OFS band, including PCS, will be considered only in future proceedings, thus expressly discouraging direct comparisons between existing and future services in this proceeding. Notice at ¶¶ 28 and 29.

frequencies in all PLMR services and that most Class A Citizens could be accommodated within the PLMR-Business service. Second Report and Order, Docket No. 13847, 11 F.C.C.2d 648, 651-656 (1968). The Commission reached a similar conclusion in the early 1970s in Docket No. 18262, deciding to transfer additional spectrum to the PLMR services and to mobile radio common carriers after weighing the specific benefits of such relief against the detriment to then-existing broadcast licensees. See First Report and Order, Docket No. 18262, 19 RR2d 1663 (1970).35/ The Commission also made the same service-by-service comparisons throughout the 1980s in the Direct Broadcast Satellite (DBS) proceeding and in its decision to reallocate a UHF-TV channel to the County of Los Angeles, as well as most

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35/ The Notice's suggestion that Docket 18262 is somehow precedent for the creation of a generic emerging technologies band is based on a revisionistic interpretation of that proceeding. The Notice states that "[a]s envisioned in Docket No. 18262, the 45 MHz of [reserve] 800/900 MHz spectrum has been used to introduce new services, foster new technology, and provide for expansion of existing services." Notice at ¶ 3. The explicit purpose of Docket No. 18262, however, was to relieve land mobile congestion and to provide sufficient spectrum for growth of specific private and common carrier land mobile services. See Docket No. 18262, 19 RR2d at 1665 ("If additional spectrum space cannot be made available to the land mobile service, the Commission would appear to be faced with a limited number of alternatives -- each of which is undesirable"). Of course, the Commission anticipated that new technologies would be integral to the growth of land mobile services. But by no means did the Commission set out, as it has done here, to displace incumbent users in favor creating a band for undefined purposes.

recently in the Interactive Video Data Service (IVDS) proceeding. See Report and Order, GEN Docket No. 80-603, 51 RR2d 1341 (1982) (DBS); Report and Order, GEN Docket No. 84-902, 59 RR2d 910 (1986) (County of Los Angeles); Report and Order, GEN Docket No. 91-2, 7 FCC Rcd 1630 (1992).

42. In the instant proceeding, the Commission departs from this rational approach to spectrum allocation. There is no specific, alternate service proposed. Rather, the Commission alludes only to the catch phrase "emerging technologies" and, as an example, cites PCS. However, neither the catch phrase nor PCS has inherent meaning. In fact, just what constitutes PCS is the subject of ongoing discussion in GEN Docket No. 90-314. More importantly, while the Commission cites a variety of services which conceivably could go in the band, the Commission has made no specific recommendation as to whether each of those services would be placed in the 2 GHz OFS spectrum or as to how much spectrum actually might be needed to accommodate them.36/

43. In the end, the Commission's proposal has deprived 2 GHz OFS licensees of an essential component of their right to participate meaningfully in this proceeding -- their

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36/ See supra note 34.

ability to question the specific merits and need for prospective services. By failing to define these prospective services and by indicating that any definitional questions will be answered in separate proceedings, the Commission forecloses meaningful opportunity for public comment on the public interest, convenience and necessity for those services. Cf. Ashbacker Radio Corp. v. FCC, 326 U.S. 327, 66 S.Ct. 148 (1945) (failure to compare interests of two competitors for same spectrum in same proceeding necessarily deprives one of a meaningful opportunity to be heard). Without knowing which specific services might replace their operations, it is impossible for the OFS licensees to effectively critique the proposed alternate use for this spectrum. As a result, in their effort to preserve the services they provide in the 2 GHz spectrum, existing OFS licensees find themselves fighting only the ghosts of technologies to come. Such circumstances are anathema to concepts of administrative fairness.

2. Lack of Sufficient Record to Make a Rational Decision

44. The OFS licensees' inability to meaningfully comment on alternate uses of the 2 GHz spectrum, obviously, deprives the Commission of information which is important to

the reallocation process. The lack of such public comment, however, only compounds a more basic problem with the Commission's reallocation proposal. Namely, by depriving itself of a mechanism for weighing the public interest value of existing 2 GHz OFS operations against the value of undefined, prospective services, the Commission cannot rationally determine that the public interest is best served by displacing the 2 GHz users in favor of those prospective services.

45. The Commission's fundamental objective in all allocation proceedings is to decide which uses of the radio spectrum will best serve the public interest. See 47 U.S.C. §§ 303(c). While there is no magic formula by which to determine the public interest, the Commission's decision must be rational. The Commission must consider all essential aspects of the problems before it, and it must articulate a rational connection between the facts it finds and the choices it makes. Brae Corp. v. United States, 740 F.2d 1023, 1038 (D.C. Cir. 1984) citing Burlington Truck Lines v. United States, 371 U.S. 156, 83 S.Ct. 239 (1962).

46. The Notice's failure to consider essential aspects of the instant reallocation problem is discussed fully above. The Notice is also fatally flawed, however, in that

it precludes the Commission from finding certain facts necessary to support a reallocation. In a word, without knowing the needs of future services, the Commission cannot rationally find that those prospective services will better serve the public interest than current 2 GHz OFS operations.

47. An example bears out one inherent irrationality of the proceeding. In the Notice, the Commission reports that the Office of Engineering and Technology study concluded that 220 MHz in the 1.85 to 2.20 GHz region could be designated for innovative technologies and services. Notice at ¶ 11. The Commission then preliminarily finds that the entire 220 MHz should be allocated for emerging technologies.37/ The finding does not follow from the premise. The presumption that 220 MHz can be reallocated clearly does not support a finding that it is in the public interest to reallocate that spectrum. Before the Commission can decide to reallocate the 2 GHz OFS spectrum, it must make an authoritative decision, based on the record, that

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37/ The Notice says "Based on the findings of our staff study, we propose to reallocate 220 MHz of the 1.85 to 2.20 GHz band that is currently used for private and common carrier fixed microwave services." Notice at ¶ 19.

this specific spectrum and this amount of spectrum is necessary to accommodate prospective technologies.38/

48. The Commission, of course, can make educated estimations as to how important a specific new service may be and as to how much spectrum to allocate to it. Whether to reallocate spectrum and how much to reallocate depends on the nature and capabilities of the technologies involved. Nat'l Ass'n of Regulatory Utility Com'rs, 525 F.2d 630, 636 (D.C. Cir. 1975). But the Commission cannot simply guess, as it has done here, that prospective technologies are better suited for the 2 GHz spectrum in question than are current operations. Reasoned decision making plainly forbids such speculation. See Natural Resource Defense Council v. Herrington, 768 F.2d 1355, 1424 (D.C. Cir. 1985) ("An agency may not rely on unsupported conjecture to explain its decisions").

38/ The Commission's decision in the DBS proceeding, Docket No. 80-603, offered at least some rationale for the allocation of 500 MHz of spectrum for the DBS Service. In that proceeding, the Commission determined that DBS providers would require approximately 50 MHz of spectrum per system for the service to be viable. There were approximately ten interested applicants. The Commission therefore multiplied the spectrum required per system by the number of interested applicants and determined that 500 MHz of spectrum would be required for the entire allocation. There is no such logic to the determination, in this proceeding, that 220 MHz of spectrum is required for emerging technologies.