again concluding that it is very much in the public interest to seek participation from wireline carriers, and, in particular, AT&T which has demonstrated that it possesses the resources and the expertise necessary to establish expeditiously cellular systems with nationwide capability. These are factors, we should emphasize, that we are obligated to consider in reaching a public interest determination. *See* Section 1 of the Communications Act.[28] We further conclude not only that wireline participation is necessary but also that, in order to achieve objectives that will serve the public interest, we should reserve one block of spectrum exclusively for the use of wireline carriers, as we have done in the past.

30. Our decision in this regard is not insensitive to the potential dangers of wireline participation. It is our firm belief, however, that with the safeguards we have imposed on wireline entry, our approach best accommodates the competing interests reflected in this record and best serves the public interest, convenience and necessity.

1. *Wireline Eligibility to Operate Cellular Systems and Market Definition.*

31. In Docket No. 18262, we observed that cellular communications systems would serve the needs of users of common carrier mobile systems and, to some extent, the needs of dispatch service users. In our *Notice* in this docket, we asked whether cellular systems might serve a somewhat broader market, perhaps filling a portion of the need for conventional telephone exchange service for some users. We asked whether, if cellular service was substitutable in some degree for conventional telephone service, the Commission should limit the role of wireline carriers in the provision of cellular service. To evaluate these concerns, we urged the parties to give us their views on the relevant markets—existing or potential—which might be appropriate for us to consider in deciding whether to permit wireline participation. The comments in response to our *Notice* suggested three relevant markets: (a) conventional wireline telephone service; (b) common carrier mobile telephone service; and (c) non-interconnected private dispatch service. In addition, one party, Telocator, discussed the possibility of another identifiable market, the long distance transmission service market for calls which originate or terminate on mobile telephones.

32. Our primary reason for questioning wireline operation of cellular systems at this late date was our concern that cellular technology might have developed the potential to be competitive with local exchange service, thereby creating a disincentive on the part of wireline carriers to fully develop cellular service in the areas where

that such entities might have an incentive to inhibit rather than advance cellular development. *Id.* at 993–94.

[28] 47 U.S.C. §151 states, in part, that the Federal Communication Commission is created "so as to make available, so far as possible, to all the people of the United States, a rapid, efficient, Nationwide . . . communication service . . . .

they also offer local exchange service. From our review of the record, however, there appears to be a consensus that our concern was unfounded. Most commenters believe that cellular systems will initially only be competitive in the traditional 2-way mobile market. Our own evaluation is in agreement with this position. The key to local exchange substitutability in any practical sense is the availability of an inexpensive handheld portable unit that is light in weight.[29] Until such an inexpensive unit is available, cellular service cannot realistically serve as a meaningful replacement for local wireline exchange service.[30] We do not foresee the widespread availability of such inexpensive units for some time. Furthermore, the size of the spectrum allocation will limit the number of users of a cellular system, while a landline system can expand indefinitely. Because of the likely unavailability in the near term of portable units that are truly substitutable for landline telephones and the inherent spectrum limitations on cellular systems,[31] we cannot conclude that wireline telephone service is within the relevant market in this proceeding. Therefore, we conclude that there is no reason to rule wireline carriers ineligible out of concern that they will have a disincentive to advance the development of the cellular system because of its short term potential replacement of their local landline service.[32]

33. In our *Notice*, we also asked whether cellular systems might substitute for existing conventional two-way mobile service and, if so, whether we should restrict wireline participation to prevent them from extending their dominance in one market into another. Again, we

[29] Obviously, a telephone that is confined to a vehicle will not significantly substitute for a home or office telephone. A hand-held or pocket-size telephone could conceivably replace a fixed telephone for some users, however.

[30] A subscriber unit for a landline system is a relatively simple, inexpensive device, while a mobile or portable unit is inherently more complex and expensive because it includes, among other things, a radio transmitter and receiver, battery, amplifiers, and microprocessor.

[31] Millicom, a primary proponent of the view that cellular systems can be cost competitive with landline service, admits that such competition will not likely develop in major urban areas; it also bases its projection on the availability of a low-cost portable unit, a portable Millicom believes can be developed and produced at a cost under $1000. Millicom has offered no support for its cost estimate of under $1000, however, and we are not convinced that such a unit, even if available at that cost, would make cellular service truly competitive with landline service. The Department of Justice also contended that "[c]ellular systems may have the potential to provide services that are substitutes for local wireline carriers, at least in some locations." Department of Justice Reply Comments at 9. Justice did not contend, however, that this "potential substitutability" would occur in the near term, nor did it address the factors which would affect such substitutability.

[32] Telocator believes that an identifiable market in mobile telephone long distance originated and terminated calls may develop, and that this market is relevant for purposes of our analysis. Apparently Telocator believes that wireline operation of cellular systems would foreclose specialized common carriers from participating in this long distance market. Telocator's argument, however, is insufficiently developed to allow us to consider this issue at this time.

think a restriction would be unwise. We agree with the analysis of most commenters that cellular service will be an effective substitute—both in price and service—for present common carrier mobile service and will meet the demand for this service over the foreseeable future. Nevertheless, it is still premature to predict whether cellular will *replace* conventional mobile systems, especially in the smaller geographic markets. There, demand is likely to be lower and growth a little slower. It is even possible that conventional mobile system operators, in response to cellular competition, will lower their rates[33] and offer a different, otherwise unavailable package with greater operational simplicity to remain competitive alongside the more sophisticated system. In any event, we see no reason to prohibit cellular operation by wireline companies because this new technology might drive existing conventional mobile system operators out of business. If that occurs, we agree with NTIA that it will be because of the nature and capacity of the cellular system and not because of the identity of its operator. Insofar as the concern here is that the demise of conventional two-way systems will come about because of AT&T's ability to engage in anticompetitive practices, we address that matter below.

34. The comments in response to our *Notice* also suggested that we should consider the impact wireline-operated cellular systems will have on the non-interconnected dispatch market.[34] Although dispatch services are currently available on some common carrier systems, more than ninety percent are provided through private systems. We would expect, however, that cellular systems could meet the perceived needs of many dispatch users if dispatch communications were permitted. Although it is again speculative at this time whether cellular systems will be cost competitive with private systems, especially for large users, it is likely that for some users a cellular system might provide dispatch services at comparable quality and price. A cellular system would also be able to provide dispatch users with interconnected service over the public telephone network. In any event, we again find no justification to prohibit dispatch service on wireline cellular systems simply because these systems will lure customers away from existing dispatch operations; our obligation is not to protect existing radio common carriers from competition nor to maintain the present position of private dispatch systems.[35] Motorola, however, urges that we

[33] Because the present two-way market is generally so congested, and demand therefore exceeds supply, it may be that existing customers are paying rates above competitive levels in some markets.

[34] Dispatch service is a type of service commonly used by businesses such as taxi, delivery and repair services. Dispatch service is characterized by the exchange of brief messages, normally one minute or less in duration, between a land based dispatcher and a mobile station, without using the public switched telephone network.

[35] There is an additional reason why a prohibition against dispatch service by a wireline

prohibit dispatch by wireline carriers for a different reason. It maintains that private dispatch operators would be endangered by wireline carrier cross-subsidization of cellular dispatch operation with monopoly revenues.

35. That wireline operated cellular systems might come to dominate other markets—conventional or dispatch—is, of course, a matter of concern to us. Regulatory agencies, including this Commission, are required to consider pertinent competitive policies in making public interest findings.[36] Promotion of competition alone, however, is not synonymous with the public interest.[37] Thus, while we must consider potential anticompetitive effects attributable to the entry of wireline carriers, we must also consider the benefits of wireline entry, both in terms of services and competition, and whether continuing regulatory supervision can prevent anticompetitive behavior.[38] In addition, we recognize that a potential effect on competition may well call for a different regulatory response than an immediate effect on competition would. This is particularly ture when anticompetitive effects cannot be predicated with accuracy in advance but will become apparent, if at all, only upon implementation.[39]

36. Based on the record before us and on our conclusions with respect to the relevant market for cellular systems, we conclude that an across-the-board prohibition on the entry of wirelines into the cellular market is not warranted. We recognize that cellular service will be substitutable to a great degree for present common carrier mobile service and private or common carrier dispatch service. Nevertheless, as we discuss in the sections that follow, we find that there are compelling public interest reasons to support wireline ownership of cellular systems, particularly when we have at our disposal measures that we are confident can minimize the risk of any potential anticompetitive behavior.[40]

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cellular operator would not be in the public interest. The offering of dispatch service by wireline cellular systems could well serve to deconcentrate the existing dispatch market by lessening the power of the equipment vendor over service availability.

[36] *NARUV v. FCC*, 525 F. 2d 630, 636 & n. 25 (D.C. Cir. 1976), *cert. denied*, 425 U.S. 992 (1976).

[37] *FCC v. RCA Communications, Inc.*, 346 U.S. 86, 93 (1953); *Hawaiian Telephone Co. v. FCC*, 498 F. 2d 771 (D.C. Cir. 1974).

[38] *United States v. FCC*, 47 RR 2d 1, 31–34 (D.C. Cir. 1980) *(en banc); NARUC v. FCC*, 525 F. 2d at 638.

[39] *NARUC v. FCC*, 525 F. 2d at 638.

[40] We should at this juncture address the concerns raised by the Court of Appeals in the *NARUC* case. The *Order* under court review, the *Second Report and Order* in Docket 18262, as modified on reconsideration, proposed an allocation of 40 MHz to only one system operator per market (a wireline or non-wireline entity could apply), required that a separate subsidiary be established if the successful applicant was a wireline company, and did not make clear whether wireline telephone companies had to provide interconnection to radio common carriers. Because our allocation scheme has significantly changed since the Court of Appeals reviewed our final decision in Docket 18262, many of the court's concerns no longer seem present. First, our

37. *Number of Licenses Nationwide.* Although some parties argued for restrictions on the number of licenses issued to the same entity, we have concluded that the public interest would not be served by imposing restrictions on the number of markets any given entity—reline or non-wireline—may enter. Our main objective in suggesting in our *Notice* tha such a limitation might be appropriate was to encourage maximum diversity of technological development. 78 FCC 2d at 994. We are not convinced on the record before us that technological diversity would necessarily be enhanced by such a limit. It may well be that entities which might otherwise invest heavily in technological development would hesitate to do so if required to operate in only a limited number of markets. At the same time such a policy could diminish the number of potential entrants into some geographic markets or limit the areas in which service is offered.

2. *Separate Five Year Frequency Allocation for Wireline Carriers*

38. The discussion on wireline eligibility focused principally on whether wireline carriers should be allowed to operate cellular systems because of the potential threat to existing competitors offering two-way mobile service. In this section, we address the question of whether we should reserve a separate frequency allocation for the wireline telephone companies. AT&T, the independent telephone companies, and the National Telecommunications Information Agency (NTIA) recommend that we establish a separate wireline allocation; Telocator

allocation scheme now contemplates two, rather than one, system operator per market, thus reducing the fear the court expressed that AT&T, by virtue of our one-to-a-market policy, might operate most, if not all, of the cellular systems put in operation and thus significantly increase its opportunity to dominate the radio telephone market. We expect now to have entities with considerable resources to operate cellular systems in competition with the wireline carriers. Second, the radio common carrier industry over the last several years has successfully negotiated interconnection agreements with the local telephone operating companies. *See e.g. Memorandum Opinion and Order* (Interconnection between wireline telephone carriers and radio common carriers), FCC 80-520, Mimeo 28035 (released October 9, 1980). In this proceeding, we are imposing an interconnection requirement for non-wireline cellular systems. Third, although AT&T's offering of dispatch service on a cellular system may affect the competition that now exists in that market, both the safeguards we will impose and the competition by another cellular system in the same market should diminish the likelihood that the existing competition in the dispatch market will be weakened other than simply by the superiority of cellular technology, a matter which we believe should not be artificially inhibited by government regulation. Fourth, since the time Docket No. 18262 was before the court, the Commission has adopted policies permitting those who do not own basic communications facilities to purchase and resell communications services. Although there is no guarantee that a resale cellular market will develop, we are hopeful that removal of previous restrictions against resale will stimulate the growth of such a market and thereby add to the number of cellular competitors in a community. Finally, in addition to all of the above measures, we are requiring all wireline licensees to operate cellular systems through a separate subsidiary, a step that, in addition to the above safeguards, we consider to be very beneficial.

and the Department of Justice oppose such an allocation. Our analysis of all the arguments for and against a separate allocation convinces us that a separate allocation for an initial five year period (after which both 20 MHz allocations would be available to any qualified party) is the most practical way to make cellular service available to the public in a substantial number of the most populated and congested cities across the country within the next three to five years.[41] We base this decision on several important considerations discussed below.[42]

39. *AT&T's Technical Expertise.* Much of the successful research and development in the mobile field over the years has come from wireline carriers.[43] It is not surprising, therefore, that the primary proponent and developer of cellular technology in this country has been AT&T. In fact, since 1940, AT&T has urged the Commission to allocate sufficient spectrum for a broad-band high capacity mobile system,[44] a step the commission did not initiate until 1968.[45] Several years later AT&T was afforded the opportunity to test its theory.

40. On March 3, 1977, the Commission granted the application of Illinois Bell Telephone Co. (IBT) to construct a developmental cellular system in the Chicago, Illinois, area.[46] In an order released January 4,

[41] We will entertain requests for waivers of the separate allocation during the five year period that it applies. An applicant may request a waiver to apply for the block of frequencies for which it would not be eligible under our Rules if it can demonstrate that there will be no eligible applicants applying for these frequencies during the five year period. (*e.g.*, the local wireline company does not intend to apply for its reserved block). We will also entertain requests for a waiver to permit the entire 40 MHz to be assigned as one block of frequencies. Such a waiver request must, of course, not only meet the showing discussed above (*i.e.*, that the frequencies for which the applicant is not eligible will not otherwise be applied for), but must also contain a convincing showing that the public interest will be better served by assignment of the entire 40 MHz, rather than by the potential for facility-based competition that might develop after the separate allocation expires.

[42] We note that over the years we have explored virtually every option in this area. In our *First Report and Order* in Docket No. 18262 we allocated spectrum for only the wireline carriers, rejecting a request by the RCCs for a separate, equal allocation. 19 RR 2d 1663, 1675 (1970). On reconsideration, we decided to eliminate the limitation on eligibility, but we did not establish a separate allocation. 31 FCC 2d 50, 52 (1971). In our *Second Report and Order*, we once again limited eligibility to wireline carriers, 46 FCC 2d 752, 760 (1974), but on reconsideration we decided that the limitation was unnecessary. 51 FCC 2d 945, 953 (1975).

[43] *E.g.*, *Bell Telephone Co. of Pa.*, 22 FCC 1244 (1957) (selective signaling); Bell Labs, *High Capacity Mobile Telephone System Technical Report*, submitted in Docket 18262 (1971); Young, *Comparison of Mobile Radio Telephone Transmission at 150, 450, 900, and 3700 Megacycles*, 31 Bell Sys.Tech.J. 1068 (1952); *Advanced Mobile Phone Service*, 58 Bell Sys.Tech.J.No. 1 (1979).

[44] *See General Mobile Radio Service*, 13 FCC at 1212; *UHF Allocation, Fourth Report & Order*, 41 FCC 131–138 (1951); *Frequency Allocation 25–890 Mc*, 39 FCC 567, 580 (1964), *recon. denied*, 39 FCC 608, 610 (1964).

[45] *Land Mobile Use of 806–960 MHz Band* (Notice of Inquiry and Notice of Proposed Rulemaking, Docket No. 18262), 14 FCC 2d 311, 313–15, (1968).

[46] *Illinois Bell Telephone Co.*, 63 FCC 2d 655 (1977). A few months later the Commission granted a second developmental cellular authorization to a radio common carrier. *American Radio Telephone Service, Inc.*, 66 FCC 2d 481 (1977) (ARTS). The ARTS

1979, we made it clear that the Commission had authorized IBT to make a limited commercial offering of its cellular service to public.[47] To date, developmental technical reports as well as hundreds of letters sent to the Commission from users of the IBT system all reflect AT&T's extensive technical expertise in the cellular field. In addition to this technical proficiency, AT&T has extensive expertise in traffic engineering and in the design and operation of high-capacity local switching networks, all of which are highly relevant to the rapid and efficient development of cellular systems. Given AT&T's distinctive technical capabilities, and its operation in most major markets, we are left with little doubt that only AT&T is in a position today to place cellular systems in operation around the country in the immediate future.[48]

41. *Need.* If there were not a pressing need to relieve the serious congestion that exists on conventional two-way mobile systems around the country, we might be less inclined to make a separate wireline allocation.[49] That is not the case, however. AT&T, in its "Notes on Cellular Service" attached to our *Notice*, estimates that there are 25,000 customers on its waiting lists around the country for conventional mobile service. *Notice, supra*, 78 FCC 2d at 1009. That the demand for service has long outstripped the supply is also documented by other evidence confirming long waiting lists for mobile telephone service in most cities.[50] And there is potentially a much greater unsatisfied demand than is suggested even by the waiting lists.[51] Moreover, many potential users have been discouraged from using

system has never requested permission to go into commercial operation and test market its service to the public. We would expect, however, that eventually the experience gained by Motorola in assisting the development of the ARTS system will provide non-wireline carriers the expertise necessary to build cellular systems.

[47] *Telocator Network of America v. Illinois Bell Telephone Co.*, 70 FCC 2d 713 (1979).

[48] Of course, the expertise of the independent telephone companies in traffic engineering and establishment of high-capacity local switching networks will also be important to the rapid establishment of cellular communications systems.

[49] Because two-way mobile service has been traditionally offered by wireline carriers as a logical extension of local exchange service, and because AT&T has the expertise and resources to build cellular systems that have been proven workable and efficient, a separate allocation scheme could be justified even without the pressing need for immediate relief.

[50] Many letters were placed in the public file in this proceeding describing the size of the waiting lists for mobile service and the delay in obtaining service. *E.g.*, David K. Welch, dated March 19, 1980 (Denver, Colorado waiting list of over 2,000 people; over 2 years' wait); L. B. Peace, of Terry Cook & Associates, dated March 19, 1980 (Seattle, Washington waiting list over 2½ years long); John T. Loos, dated March 27, 1980 (Ft. Lauderdale, Florida, waiting list about 3½ to 4 years long); Eugene Albert, dated March 14, 1980 (White Plains, New York, wait over 9 years); Joe Martinez, dated March 14, 1980 (New York-New Jersey area, wait over 5 years); Paul D. Speer, dated February 22, 1980 (Chicago, Illinois wait of 12 to 15 years).

[51] The developmental tests indicate that 11 percent of the businesses surveyed will subscribe to cellular mobile service. See Illinois Bell Cellular Developmental Report No. 10, p. AIII-2 (August 27, 1979).

presently available mobile service because of the congestion on the limited number of available channels,[52] and presumably many of these people would be willing to obtain relief from a higher quality service, such as offered by a cellular system, if it were available.[53] This pressing need for improved service compels us to seek a solution that will bring relief to the greatest number of people in the shortest possible time. Our separate wireline allocation is intended to do just that.

42. *Separate Allocation Minimizes Delay from Comparative Hearings.* In circumstances where the Commission has two or more applicants applying in the same general area for the same frequency and only one can be granted, it is generally considered necessary to hold a comparative proceeding.[54] This process, however, often results in substantial delays in providing service to the public.[55] A separate wireline allocation will help to minimize this problem and thus assist in achieving our objective of providing cellular service to the public in the shortest possible time. This is because generally only one wireline carrier per market will be eligible to apply for the wireline frequencies, thus avoiding the need for a comparative proceeding.[56] By the same token, we suspect that if there is only one applicant for the wireline block of frequencies and competing applicants for the other, there will

[52] The Common Carrier Bureau staff has recently analyzed a sample of applications for additional channels. The grade of service during the busy hour on the mobile systems in this study averaged 0.593; this means that 59.3 percent of all attempted calls were not completed due to the system congestion. *See* Summary of Traffic Loading Data filed in the public record of this proceeding on March 13, 1981.

[53] Many of the letters filed in this proceeding referred to the poor quality of conventional service. *E.g.*, Neil E. Bahr, dated March 24, 1980 (Miami, Florida); John R. O'Brien, dated March 26, 1980 (Hanover, Massachusetts); Frank W. Ambler, dated March 28, 1980 (Dallas, Texas).

[54] *Ashbacker Radio Corp. v. FCC*, 326 U.S. 327 (1945).

[55] In the Common Carrier Mobile Services, it has been our experience that comparative hearings take six months to one year, from designation to initial decision. If exceptions are filed from the initial decision, then another six months or more is added, and there are further delays if the Review Board's decision is appealed to the full Commission. Because there would be more at stake in a comparative hearing for a major market cellular system than for a conventional mobile system, it is likely that even more time would be consumed. We note, however, that we are adopting an expedited hearing procedure that we hope will minimize the delays in the adjudicatory process. *See* paragraphs 62–66, below.

[56] In the past, we have permitted wireline companies to apply for wireline frequencies in any market, without regard to where they are doing business as a wireline. *Bonduel Telephone Co.*, 68 FCC 2d 497 (1978). In order to achieve our objective of rapid implementation of service during the separate five year allocation period, we will not adopt the *Bonduel* approach to wireline cellular applicants, but will consider a wireline applicant to be eligible to apply only in those general areas in which it or an affiliate company is certified as a wireline carrier. This will eliminate comparative hearings for wireline frequencies except in those rare circumstances where a particular metropolitan area is served by more than one wireline and each wishes to serve the entire metropolitan area.

be a powerful incentive for competitive applicants to settle their differences. We encourage such settlements.[57]

43. *Safeguards against anticompetitive effects.* In the preceding section, we concluded that there are several public benefits to be achieved by a separate wireline allocation. Our conclusion in this regard rests in part on our confidence that we can impose adequate safeguards to substantially minimize the potential anticompetitive concerns. We emphasize that the separate allocation policy is narrowly tailored to achieve our goal of early implementation of cellular technology. The separate allocation has an automatic "sunset" provision: Five years after the Commission authorizes the first cellular system (wireline or non-wireline) in the nation, the two blocks of frequencies will no longer be earmarked for specific classes of carriers. If at that time no wireline carrier has applied for its block of frequencies in a given market, both blocks would be available to RCC's and to wireline carriers on the same terms. Furthermore, after the initial five-year period, licenses will be subject to renewal challenge; if a particular licensee has not served the public interest, there is a possibility that another entity could obtain its license. We have also adopted other safeguards, which are mentioned briefly here and discussed in more detail elsewhere.

a. First, unlike our decision in Docket No. 18262, we have now divided the spectrum allocation into two 20 MHz blocks, one of which is for non-wireline entities. Given the expense and complexity of a cellular system, we would expect that the successful non-wireline carrier will have considerable resources to be a viable competitor against the wireline carriers. Thus, with two licensees per market, it will be more difficult for a single entity to dominate the cellular market nationwide. Moreover, as we discuss later, there will be no restrictions on the resale of cellular service. Thus, there may develop a substantial secondary market in cellular service enhancing the competition between the two cellular licensees.

b. We also intend to continue the limitation adopted in Docket No. 18262 that a wireline carrier can only provide cellular service through a separate subsidiary in order to minimize the opportunity for cross-subsidization of the competitive cellular service from monopoly telephone revenues. The separate subsidiary requirement should also make equitable interconnection arrangements more

[57] Because a wireline carrier is unlikely to be encumbered by a competing applicant for the same facility, a problem may arise as a result of the wireline company's ability to get an early start in constructing and operating in its market. In our view, because of the great unsatisfied existing and potential demand for cellular service, it is unlikely that many markets will be unable to support two cellular systems. We also consider it unlikely that the advantage from an early entry into the market would be sufficiently significant to outweigh the need to grant immediate relief in markets, particularly in light of the requirement that no restrictions be placed on resale and shared use of cellular services. *See* paragraphs 103–107. If, however, a non-wireline applicant can demonstrate that permitting an early entry into the market would not be in the public interest, we would consider a request for a brief moratorium on wireline cellular service. We should emphasize, however, that general unsupported allegations of harm will not be sufficient to delay service to the public. *See WLVA, Inc., v. FCC*, 459 F. 2d 1286 (D.C. Cir. 1972); *Carroll Broadcasting Co. v. FCC*, 258 F. 2d 440 (D.C. Cir. 1958).

obtainable, a further safeguard that we will impose and which is discussed in detail below.

c. Finally, as discussed in footnote 57 *supra*, where it can be demonstrated in a particular case that harm to the public will result from allowing the wireline carrier an early entry into the market involved, we have, and will exercise, our authority to defer action on the particular wireline application.

44. *Legal Authority.* The Commission's mandate, as expressed in Section 1 of the Communications Act, as amended, 47 U.S.C. §151, is "to make available, so far as possible, to all the people of the United States a rapid, efficient, Nation-wide . . . radio communications service with adequate facilities at reasonable charges." To further that objective the Commission in the past has routinely established separate wireline and non-wireline frequency allocations. In 1949, our purpose in making a separate allocation was to foster the growth of radio common carrier enterprises that would compete with telephone companies offering mobile communications. See *General Mobile Radio Service,* 13 FCC 1190, 1218, *recon. denied,* 13 FCC 1242 (1949). The Commission reviewed this policy in 1963 and found that it had served the public interest well. *ITT Mobile Telephone, Inc.,* 1 RR 2d 957 (1963).[58]

45. In 1968, the Commission again established a separate wireline, non-wireline allocation of frequencies to be used for one-way paging services. This time, however, the reasons for doing so were not to maintain or enhance the competitive position of radio common carriers vis-a-vis wireline companies. Instead, in response to objections that the separate allocation would grant AT&T the opportunity to monopolize the one-way paging market, the Commission stated that it based its "conclusions on a composite of the situation nationwide, taking into consideration the overall need for an immediate avenue of relief for a growing and expanding service."[59] The Commission also rejected the claim that AT&T, with its exclusive frequency, would necessarily have an unfair headstart over the non-wireline carrier that might have to undergo a lengthy comparative proceeding. If an appropriate showing

[58] In two recently initiated rulemaking proceedings proposing to make channels available for one-way paging, we tentatively concluded that a separate allocation scheme for wireline and radio common carriers may no longer be necessary in order to stimulate the development of the radio common carrier industry. *See* CC Docket No. 80-189, 45 Fed. Reg. 32025 (May 15, 1980), and General Docket No. 80-183, 45 Fed. Reg. 32013 (May 15, 1980). Our action today is not inconsistent with these proceedings because our separate allocation here is not based on any need to stimulate the growth of the radio common carrier industry.

[59] *Allocation of Frequencies (Guardband),* 12 FCC 2d 841, *recon. denied,* 14 FCC 2d 269, 270-271 (1968). In response to Radio Relay's claims that because of AT&T's allegedly unfair pricing practices and its control of interconnection facilities, the non-wireline companies would be at a severe competitive disadvantage, the Commission found that Radio Relay's fears were overstated. The Commission did, however, decide to attach conditions requiring wirelines to interconnect to non-wireline companies whenever it awarded wireline licenses. *Allocation of Frequencies (Guardband), supra,* 12 FCC 2d at 846, 848-52, 14 FCC 2d at 270-71.

pursuant to Section 309(d)(1) of the Communications Act were made in a particular market, the Commission stated its intention to bar the wireline carrier from starting earlier. *Allocation of Frequencies, supra,* 12 FCC 2d at 851.

46. The Court of Appeals affirmed the Commission's decision. *Radio Relay Corp. v. FCC,* 409 F. 2d 322 (2d Cir. 1969). The Court fully agreed that competition was only one of many important criteria the Commission must consider in reaching a public interest determination. Another important factor the Commission had considered, the Court observed, was the immediate public need for the expansion of one-way paging services. *Id.* at 326. The Court also thought reasonable the measures taken by the Commission to reduce any anticompetitive practices by the wireline carriers. As for the potential early entry problem, the Court agreed that a competitor must be allowed to show that a wireline carrier's early entry would be competitively harmful, although the Court also recognized that that advantage might have to give way to a finding of immediate public need for the service. *Id.* at 329. *Accord. Pocket Phone Broadcast Service, Inc. v. FCC,* 538 F. 2d 447 (D.C. Cir. 1976).

47. In summary, we believe that we have a firm legal foundation for establishing a separate wireline allocation in a situation where, as here, (1) there is an immediate need for service to the public, (2) this need can be addressed quickly by a wireline company's expertise, (3) the separate allocation licensing scheme is a reasonable means of avoiding long delays in the availability of any cellular service attributable to comparative hearings, and (4) we have taken reasonable steps to guard against anticompetitive practices. This decision is based on our full consideration of the countervailing considerations raised in the comments and represents our determination of how best to balance the competing public interest factors. See *FCC v. National Citizens Committee for Broadcasting,* 436 U.S. 775, 809, 810 (1978).

3. *Separate Subsidiary Requirement*

48. The introduction of cellular radio technology as a basis for an expanded mobile telephone service raises an important regulatory question: how can the introduction of an expanded local telephone service using new technology but provided by wireline carriers be reconciled with a fear expressed by the Commission and others that local exchange telephone companies will have the potential to forestall other competitors by using predatory pricing tactics or misallocating the shared costs of cellular and conventional wireline service? As we have discussed earlier, this concern must be considered alongside other public interest considerations favoring wireline participation. One step we believe we can take to abate this fear is to require wireline carriers to establish a separate subsidiary to offer cellular service. This should

make the detection of anticompetitive conduct somewhat easier for regulatory authorities.[60]

49. This structural separation, like any form of regulation, entails both costs and benefits. A cost of this separation is the preclusion of some of the possible economies in jointly providing both traditional wireline and cellular service on an integrated basis. Because these services are not now jointly provided, however, the cost savings of foregone joint production may not be large, *i.e.*, stand-alone provision of these services is already technologically feasible and existing wireline plant has not been engineered with the joint supply of cellular service in mind.

50. On the other hand, the benefits of such separation may be substantial. First, structural separation may encourage competitive entry by reducing the possibility that wireline carriers will behave anticompetitively. Certainly as the Department of Justice has contended,[61] the imposition of a separate subsidiary requirement will not alter the opportunity of wireline carriers to pursue anticompetitive strategies. Nevertheless, we reject Justice's suggestion that a separate subsidiary requirement must therefore be virtually a nullity. Complete corporate separation between wireline and cellular entities can frustrate the achievement of anticompetitive strategies because it may, at the margin, imply just enough risk of regulatory exposure to deter such behavior. Second, a separate cellular entity greatly simplifies the opportunity of other cellular operators to gain interconnection rights to the landline network on the same basis as the telephone subsidiary offering the underlying basic cellular transmission facilities. Requiring a wireline carrier to offer cellular service only through a separate entity with facilities separate from the wireline service reduces the opportunity that "technical complexity" or similar reasons could be invoked by wireline carriers as a basis for denying interconnection.

51. The question also arises whether, as we had contemplated at the conclusion of Docket No. 18262, we should impose these separate subsidiary requirements on all wireline carriers or only on selected wireline carriers. After careful consideration of this matter, we have decided to require a separate subsidiary for all wireline carriers. We recognize that this may impose a relatively larger burden on independent telephone companies than on AT&T; however, independent companies also have the opportunity to engage both in predatory

[60] In recent years, AT&T, because of its dominance in the telecommunications industry, has been required to establish separate corporate entities, *i.e.*, separate subsidiaries, for offering certain types of communications services. The imposition of this form of structural regulation on established carriers is a direct result of policies of the last decade encouraging entry of new firms into various telecommunications markets. *See e.g.*, *Specialized Common Carrier Services*, 29 FCC 2d 870 (1971), *aff'd sub nom.*, *Washington Utilities and Transportation Commission v. FCC*, 513 F. 2d 1142 (9th Cir.), *cert. denied*, 423 & U.S. 836 (1975).

[61] Department of Justice Reply Comments at 17.

practices by using their monopoly revenues from local exchange service and to deny a competing cellular operator interconnection rights. Weighing these competing interests we believe that imposing this requirement on all wireline carriers is necessary to adequately safeguard against potentially anticompetitive practices and to assure equitable interconnection arrangements. In addition, we will entertain requests for waivers of our separate subsidiary requirement where carriers demonstrate that imposition of that provision will be unduly burdensome and that the potential abuses discussed above can be guarded against by less burdensome means.

52. The details of the subsidiary requirement are set forth in our Rules. Briefly, a separate corporate entity must maintain its own books of account, separate officers, separate operating personnel, and separate computing and switching facilities.[62]

4. *Interconnection*

53. The particular terms and conditions for interconnection of cellular systems with the public switched telephone network have not previously been examined by the Commission. In Docket 18262 we stated our intention that cellular systems be fully interconnected, *see* 51 FCC 2d at 954–55, but the degree to which cellular systems should be incorporated into the network and the hierarchical level at which the cellular systems will interface with the network have not yet been addressed.

54. We believe cellular communications systems will be an important adjunct to, and extension of, the public switched network. That belief, at least in part, underlies our decision to encourage the participation of wireline carriers in the provision of cellular service through the allocation of a separate block of frequencies. We hope that cellular systems of both the wireline carriers and the non-wireline carriers can be incorporated into the network through the interconnection arrangements most favorable to the end user. Some commenters, notably Jan David Jubon, a consulting engineer, urged the Commission to adopt a policy of requiring the interconnection of a cellular system to the telephone network as a class 5 office (also known as an end office or local office) on the same basis as an independent telephone company, instead of connecting to a telephone company central office in the manner of a subscriber telephone or PBX. AT&T proposed that the local telephone company make available a standard interface between the cellular system and the wireline network. The interconnection would be at "one or more local serving wire centers," a serving

[62] In addition, consistent with our regulatory philosophy expressed in our *Second Computer Inquiry*, AT&T's cellular subsidiary is precluded from selling terminal equipment. *Second Computer Inquiry, Final Decision*, 77 FCC 2d 384 (1980), *Memorandum Opinion and Order*, 84 FCC 2d 50 (1980), *under review sub. nom. Computer and Communications Industry Association v. FCC*, D.C. Cir. No. 80–1471 and consolidated cases.

wire center being a "local telephone company location through which all customers within the geographical area served by that wire center gain access to all of that company's services."

55. In some cases, interconnection of a cellular system as a class 5 office, rather than at a lower hierarchical level, may well be the most appropriate policy.[63] In this regard, we note that no reason has been advanced why the interconnection of a cellular system with the network as a class 5 office is technologically or economically inadvisable in general. To the extent that a cellular system will perform the functions of a class 5 office we believe it should be eligible to occupy the hierarchical position of one, and should not be arbitrarily placed below that level. This type of interconnection may not necessarily be the best engineering or cost effective approach in every case, however, as Telocator notes in its reply comments. For this reason we would be hesitant to mandate interconnection of cellular systems to the network as class 5 offices in all cases.[64] The particular point of interconnection of a given cellular system will be dependent upon the design of the system and other factors which may vary from case to case, however.

56. A cellular system operator is a common carrier and not merely a customer; interconnection arrangements should therefore be reasonably designed so as to minimize unnecessary duplication of switching facilities and the associated costs to the ultimate consumer. The particular arrangements involved in interconnection of a given cellular system should be negotiated among the carriers involved and be made the subject of an intercarrier agreement. We do not have a record at this time to determine precisely what such agreements must include.

57. For these reasons, we are not at this time requiring any single type of interconnection for all cellular systems. We shall expect all telephone companies to furnish appropriate interconnection to cellular systems upon reasonable demand, however, and upon terms no less favorable than those offered to the cellular systems of affiliated entities or independent telephone companies. *See Adjustment of Band Edges (Guard Band)* 12 FCC 2d 841, 846, 852, *recon. denied*, 14 FCC 2d 269 (1968), *aff'd sub nom. Radio Relay Corp.* v. *FCC*, 409 F. 2d 322 (2d Cir. 1969).

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[63] According to Jubon, this would eliminate the need for duplication of central office switching functions and concomitant revenue concentration to the wireline telephone carrier. It would allow non-wireline cellular carriers to perform exchange-level switching functions for their subscribers on an equitable basis—connecting to the network on the same basis as any other exchange-level switch, or class 5 office.

[64] In our recent *MTS WATS Market Structure Report and Third Supplemental Notice*, we said, in a similar context,

> The suggestion that all of the access problems can be resolved by requiring identical access at identical charges is probably too simplistic . . . . We are concerned that any effort to establish a single charge for all access to the local exchange might create a regular straight-jacket that would tend to inhibit . . . innovation service diversity . . . . 48 RR 2d, 67, 90 (1980).

5. *Equipment*

58. Docket No. 18262 prohibited wireline cellular system operators from manufacturing mobile station equipment, but not base station equipment. *Memorandum Opinion & Order* (Docket No. 18262 on reconsideration) 51 FCC 2d at 952. We allowed wireline licensees to supply and maintain mobile equipment because we believed to do otherwise might limit the availability of equipment over the short term. In the *Notice*, we requested comments on whether these policies were still appropriate. We additionally inquired whether mobile units should be provided on a tariffed or non-tariffed basis, and whether we should require wireline licensees which design, develop or manufacture cellular system components to sell their technology at reasonable fees.

59. With regard to subscriber equipment offerings, we note that the Commission has adopted a general deregulatory policy in the area of terminal equipment since Docket No. 18262 was decided. Since then the terminal equipment market has become increasingly competitive, and there is no reason to believe that consumers will have difficulty in obtaining mobile units. For example, the Illinois Bell developmental system uses mobile units manufactured by E. F. Johnson, Motorola, and OKI. These and several other manufacturers also have tested prototype mobile and portable units on the system. Nevertheless, in view of the competitive nature of the equipment market, we will continue to permit wireline subsidiary licensees to supply and maintain equipment, consistent with our policy of permitting market entry unless there is a compelling showing that it should be restricted. With respect to the questions of tariffing the provision of mobile units, we see no reason why mobile units used in conjunction with cellular systems should be treated differently than other customer premises equipment. Under our *Second Computer Inquiry*, new terminal equipment is to be deregulated (*i.e.*, unbundled and detariffed) after March d 1982. Because cellular service is a new service for which its mobile equipment has never been tariffed, we will require that it be unbundled and detariffed from the start. Further, consistent with the *Second Computer Inquiry*, AT&T may only offer this deregulated terminal equipment through a subsidiary separate from the subsidiary offering basic cellular transmission service.[65]

60. We have also determined that wireline licensees should be permitted to manufacture mobile as well as base station equipment. Banning licensee manufacture of equipment would provide unwarranted protection for non-licensee manufacturers and deprive the public of the potential benefits of competition. Most of the comments that

[65] *See* 77 FCC 2d at 435–57, 461–88, 80 FCC 2d at 71–75. Note that the exclusion of mobile telephone equipment from the scope of the *Second Computer Inquiry* was to preserve our options in this proceeding. *See id* at 447 n. 57. We have found no compelling reason to treat cellular mobile equipment differently from landline customer premises equipment, and we therefore have decided to include cellular mobile equipment within the general policies adopted in that proceeding.

supported such a rule focused on fears of either anticompetitive procurement policies by carrier/manufacturers or the ability of Western Electric to dominate the market. At this time we have no reason to believe such fears are justified. In view of the fact that numerous manufacturers have developed prototype cellular units, we expect a competitive environment to flourish. Therefore, we see no need to impose any restrictions on licensees or affiliates on the manufacture of cellular equipment, including the mobile units. If anticompetitive acts by cellular carriers take place in the equipment manufacturing area that have an effect on our regulatory responsibilities, we can take appropriate action at that time.

61. Finally, we have also determined that we will not impose a special requirement upon wireline cellular licensees to share technology. We are not persuaded, as Telocator urges, that such a requirement is necessary. Although we are cognizant of the argument that license contract revenues have financed cellular development, and that as a result cellular technology should be shared, we believe that it is more appropriate to examine technology sharing in the context of the *License Contract* proceeding. *See* CC Docket 80–742, 84 FCC 2d 259 (1981).

C. General Policies and Standards

1. *Evaluation of Applications*

62. We anticipate that competing non-wireline applications for particular markets will be filed for the Block A frequencies set aside for that group in a number greater than the available licenses. In this section, we discuss the procedures to be used for choosing among mutually exclusive qualified applicants. We also set forth the basic and comparative criteria to be used in evaluating cellular applications.

63. *Procedures.* In the *Notice* we expressed concern that the procedures for consideration of competing applications might cause significant delays in the implementation of cellular service. Such long delays could impose substantial burdens on the applicants, inconvenience the public and frustrate our goal of having cellular service available as rapidly as is practically possible. Therefore, we suggested consideration of, and requested comments on, all available procedures that may shorten the time required to select from among competing applicants. comments on, all available procedures that may shorten the time required to select from among competing applicants.

64. Among the procedures we discussed in the *Notice* were the adoption of more streamlined procedures to be used in association with conventional comparative hearings and the use of lotteries or auctions. We also expressed our tentative belief that a hybrid approach could be developed which would minimize the delay associated with the present comparative process while retaining the benefits of comparing proposals that differ substantially on matters that may affect service to the

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public. In general, the commenters were opposed to the use of lotteries and auctions to select from competing applications. Instead, most commenters urged us to streamline existing comparative procedures. Those commenting favorably with regard to lotteries generally supported an approach similar to the hybrid plan outlined in our *Notice*.

65. Because we believe there may be significant differences among competing applications, we will not adopt, at this time, a straight lottery or auction procedure.[66] Nor will we adopt a hybrid procedure, as outlined in the *Notice*. Future events may, however, dictate a reexamination of appropriateness of using a lottery, auction or hybrid approach for cellular licensing decisions. Consistent with our discussion in the *Notice*, however, we reject the argument that a traditional oral evidentiary hearing—and all its attendant delays—is necessary except in unusual situations. Thus, we find that a procedure involving only "paper" hearing and evidence, decided by an Administrative Law Judge, will best serve the public interest while protecting the procedural interests of the competing private parties. While this approach will not eliminate the delay associated with comparative hearings, it should serve to reduce it somewhat.

66. After applications are received by the Commission and reviewed in accordance with the basic qualifications requirements set forth in this order, competing applications will be designated for comparative considerations. The parties will be permitted to utilize normal discovery processes and submit briefs and appended evidence (under oath) to demonstrate superiority. An Administrative Law Judge will then review the pleadings and, based on the comparative criteria established by the Commission, determine what disposition of the competing applications will best serve the public interest, convenience and necessity. We do not envision that substantial issues of fact requiring oral testimony will arise, except in unusual situations. We will, however, delegate to the presiding Administrative Law Judge authority to receive oral testimony, to provide for cross examination of witnesses and to adopt other procedures not inconsistent with the Commission's rules or the Act upon a substantial showing that a party will be prejudiced by the submission of all the evidence in written form. *See* 5 U.S.C. §556(d). We will also delegate to the Common Carrier Bureau authority to determine, at the time of designation for hearing, that exceptions to a decision by an Administrative Law Judge shall be made directly to the Commission. *See* Section 0.365 of our Rules. Administrative Law Judge shall be made directly to the Commission. *See* Section 0.365 of our Rules.

67. *Legal Authority*. The Commission has broad discretion to use

[66] These procedures are being examined in another rulemaking proceeding. *Use of Alternative Procedures in Choosing Applicants for Radio Authorizations in the Multipoint Distribution Service*, CC Docket No. 80-116, 45 Fed. Reg. 29335 (May 2, 1980).

differing procedures in differing contexts as required for the proper dispatch of business, and the types of hearing required must be analyzed in terms of the nature of the proceeding and the pertinent statutory provisions. *Bell Telephone Co. of Pennsylvania* v. *FCC*, 503 F. 2d 1250 (3rd Cir.), *cert. denied*, 422 U.S. 1026 (1974). Our paper hearing procedures satisfy the general statutory provisions relevant to hearing procedures to be employed in adjudicative administrative proceedings as set forth in Sections 554 and 556 of the Administrative Procedure Act (APA) and Section 409 of the Communications Act. Although Section 556 is generally applicable to hearings, and entitles a party to present oral or documentary evidence and "conduct such cross-examination as may be required for a full and true disclosure of the facts,"[67] it is effective in cases of adjudication only when made so by Section 554. Section 554 applies only to adjudications "required by statute to be determined on the record . . . ."[68] Nothing in Section 409 of the Communications Act, which contains procedures for certain types of hearings, or Section 309(e), which relates specifically to hearings in license proceedings, requires that such hearings be "on the record." Additionally, Section 556 has an express exemption which provides that for applications for initial licenses, "an agency may, when a party will not be prejudiced thereby, adopt procedures for the submission of all or part of the evidence in written form."[69] Thus, our paper proceeding satisfies the general hearing requirements set forth in the APA and the Communications Act. Indeed, the APA provision which is designed to establish procedural hearing rights appears specifically to condone paper proceedings for initial license awards.

68. Aside from our statutory authority to conduct paper proceedings, our proposal also meets the hearing requirements set forth in *Ashbacker Radio Corp. v. FCC*, 326 U.S. 327 (1945), and other court decisions considering the adequacy of Commission hearing procedures. *Ashbacker* is most often cited as requiring a comparative hearing for consideration of competing applications. However, it says nothing about a full oral trial-type hearing. Instead, the basic requirements of *Ashbacker* are twofold: an equitable and meaningful hearing for all applicants and a determination, based on an exercise of judgment, on where the public interest lies. Our "paper" procedure meets both the equity and public interest requirements of *Ashbacker*.

69. The fact that comparative hearings have been traditionally conducted in a full oral adjudicatory proceeding does not limit our

[67] 5 U.S.C. §556(d).

[68] 5 U.S.C. §554(a) Cf. *United States v. Florida East Coast Ry. Co.*, 410 U.S. 224 (1973); *United States v. Allegheny & Ludlum Steel Corp.*, 406 U.S. 742 (1972).

[69] Although Section 409(a) once permitted parties to choose between oral or written appeals to the Commission from initial decisions by examiners, that right was expressly withdrawn in 1961. *See Facilitating the Prompt and Orderly Conduct of the Business of the Federal Communications Commission*, Conf. Rpt. No. S. 2034 (76),87th Cong., 1st Sess. 1 (1961).

discretion to explore other alternatives for, as the U.S. Court of Appeals for the Third Circuit has said:

> As technology develops and the field of communications changes, procedural, as well as substantive, policy must be flexible. The mere fact that an agency has once regarded evidentiary hearings as appropriate does not bar it from adopting another policy when changing or new circumstances require a different approach.

Bell of Pa., supra, 503 F. 2d at 1265. Our paper procedures are particularly appropriate for hearings on cellular applications. A significant objective in this proceeding has been to expedite service to the public. These procedures will further that objective by accelerating the selection of the best applicant without sacrificing an applicant's right to be heard.

70. In cellular systems licensing proceedings we do not believe that oral testimony will, except in unusual situations, enhance our ability to make public interest findings. We have noted in our *Notice of Proposed Rule Making* regarding the Multipoint Distribution Service (MDS NPRM)[70] that "paper" evidence and argument should suffice, both in terms of the private right to be heard on disputed factual issues and the public interest in awarding licenses:

> The issues that we have today delineated for hearing will largely entail expert evidence and evaluation of both an economic and engineering nature. Such evaluation, it appears to us, would not ordinarily be enhanced by the traditional courtroom drama of oral presentation by witnesses on the stand. Live testimony, affording the opportunity to judge demeanor and credibility of a witness, would afford nothing in this context. The opportunity to submit both written briefs and evidence (by way of studies, etc.), with an opportunity to reply to competing submissions, should serve as a more efficient and more logical vehicle to flesh out significant issues without any sacrifice of a meaningful hearing on such issues. Thus, we believe a "paper" evidentiary hearing offers the best procedures for a full and true disclosure of the facts without prejudicing any party.

45 Fed. Reg.at 29344. We believe the discussion in the *MDS NPRM* is equally relevant in the present proceeding.

71. *Basic Criteria.* Cellular applicants will be required to comply with all the basic qualifications requirements which apply to applicants in the Public Mobile Radio Services, except as provided for in the new Subpart K of our Rules, adopted today. Section 22.913 of our Rules sets forth the particular showings required of cellular applicants, including the application forms to be used and the exhibits to be provided.

72. Cellular applicants must demonstrate that they are financially qualified to construct their proposed facility and to operate it for a reasonable period of time. Such a demonstration is necessary because of the large capital investment required to finance the highly sophisticated technology associated with cellular operations, and because cellular service is in an early stage of development and must be viewed as a relatively high-cost business venture.[71] Moreover,

[70] *See* note 66, *supra*.

because our Rules provide that only two cellular systems can operate in the same geographic area, the inability of any cellular licensee to provide service could significantly inconvenience the public and would cause a huge amount of spectrum to be unused.

73. Cellular applicants need not, however, demonstrate a public need for service in order to comply with our basic cellular qualifications. We have eliminated this requirement as a basic qualification because of our desire to establish cellular service nationwide and because of the information provided in this proceeding indicating a need for service generally. *See* paragraph 41, *supra*. Therefore, even in the unlikely event that an applicant could not show local need, the presence of a cellular system would further our overall objective. However, our comparative criteria, discussed below, include a consideration of the public need each applicant is likely to serve.

74. *Comparative criteria*. In the *Notice* we asked for comment on the criteria to be used in evaluating competing applications on a comparative basis, as well as basic qualifying criteria for cellular applications. We listed criteria traditionally used in the Domestic Public Land Mobile Radio Service, as well as several other factors that may be relevant, and we asked commenters to suggest other criteria. There was some support in the comments for using the traditional DPLMRS criteria. Telocator suggested that existing, certificated RCCs should be preferred and that wireline carriers and applicants with a history of anticompetitive activity should receive demerits. AT&T suggested that an applicant's technical skills with regard to cellular engineering should be a significant criterion.

75. In establishing policies for cellular service we have intended to serve the public interest by implementing a nationwide high-capacity mobile communications service capable of providing both local and roaming mobile telephone users the ability to place and receive calls. The criteria used in selecting licensees should therefore be related to these goals.

76. Because nationwide availability of service is a primary goal, a major basis of comparison will be the geographic area that an applicant proposes to serve. In comparing proposed service areas, other significant factors to be considered will be the presence of densely populated regions, highways, and areas likely to have high mobile usage characteristics, as well as indications of a substantial public need for the services proposed, including the results of public need surveys.

77. The second major comparative factor is the applicant's ability to expand its system capacity in a coordinated manner within the proposed service area in order to serve an increasing number of local

[71] Our position on this matter is not inconsistent with our action in an earlier rulemaking where we eliminated the requirement that DPLMRS applicants demonstrate financial qualifications. There we noted that the DPLMR Service is a low-cost, low-risk industry. *Elimination of Financial Qualifications*, 82 FCC 2d 152 (1980).

subscribers and roamers as demand warrants. Expansion can take place through the addition of transmitters beyond those originally planned or through the addition of cell locations and the use of smaller cells. In making a comparison, preference will be given to designs entailing efficient frequency use. Efficient frequency use entails not only the applicant's plans with regard to cell-splitting and additional channels, but also the degree of frequency reuse the system is and will be capable of, as well as the ability to coordinate the use of channels with adjacent or nearby cellular systems.

78. There will be other areas in which applicants can be compared in ways that are relevant to the public interest goals of the cellular service, but they will generally be less significant than these two criteria. The adequacy of base station and switching facilities and related maintenance proposals may be an issue in comparative proceedings in some cases, but we do not expect this to be a significant issue in general. Personnel and practices will be significant to the extent that they affect an applicant's ability to implement its proposal. The rates, charges, classifications, and regulations of applicants will also be considered a basis for comparison as well as the public need indicated by subscriber surveys. In view of the competitive nature of the mobile equipment market, and the fact that this area is to be deregulated, however, we will not compare cellular proposals on the basis of subscriber equipment or its maintenance.

2. *Federal-State Jurisdiction*

79. Throughout the cellular proceeding an essential objective has been for cellular service to be designed to achieve nationwide compatibility. In this regard, we expressly stated that a cellular subscriber traveling outside of his or her local service area should be able to communicate over a cellular system in another city. Nationwide compatibility is also likely to increase the number of manufacturers providing the cellular equipment. This price and product competition should benefit the consumer through lower equipment costs and greater equipment selection. Because state and local regulation might conflict with and thereby frustrate our federal policy of introducing cellular service in a competitive environment without significant delay, the *Notice* asked whether there may be a need to assert federal primacy over the regulation of cellular services.

80. Federal courts even before passage of the Communications Act in 1934 had held that the Federal government already fully and exclusively occupied the field of radio licensing and regulation.[72] However, Congress, in the Communications Act of 1934, as amended, explicitly granted to this Commission sole authority to license radio facilities. Specifically, Section 301 of the Act provides that "[n]o person

[72] See *e.g.*, *The Federal Radio Commission in Federal Court*, XIV Journal of Broadcasting 343 (Fall 1970), especially authorities discussed at 397–98.

shall use or operate any apparatus for the transmission of energy or communications or signals by radio . . . except under and in accordance with this Act and with a license on that behalf granted under the provisions of the Act." 47 U.S.C. §301. In enacting such legislation Congress has determined that overall management of the radio spectrum and the licensing of radio facilities are areas within the exclusive jurisdiction of the Federal government. *NARUC v. FCC*, 525 F. 2d 630 (D.C. Cir. 1976), *cert. denied*, 425 U.S. 992 (1976).

81. The Communications Act also provides, in Title II, a framework for the economic regulation of common carriers. Sections 2(b) and 221(b) reserve to the states jurisdiction with respect to charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate or local exchange communications service by wire or radio 47 U.S.C.Section 152(b) and 221(b).[73] However, both of these sections are expressly subject to our authority under Section 301, which gives this Commission sole jurisdiction over radio licensing. In Docket No. 18262, in comparing the scope of Sections 2(b) and 221(b) with that of Section 301, we concluded that the "licensing" or "franchising" functions are not among those reserved to the states even with respect to common carriers subject to Sections 2(b) and 221(b). 51 FCC 2d 945, 974. By virtue of the Communications Act the FCC may fully exercise its authority to license or certify how many and which carriers will operate cellular systems.[74]

82. In accordance with our authority discussed above, we are asserting federal primacy over the areas of technical standards and

[73] Sections 2(b) and 221(b) were amended in 1954 to clarify this Commission's jurisdiction over telephone and telegraph companies engaged primarily in intrastate and local regulation rather than federal regulation. The amendments added intrastate and local exchange radio service to the area reserved to the states.The purpose of the amendments was to insure that the use of radio, as opposed to wireline, in the communication service offered by telephone and telegraph companies engaged primarily in intrastate activities would not subject such companies to the jurisdiction of this Commission. However, these amendments were not intended to withdraw from this Commission its exclusive authority over the licensing of radio facilities. *See* 1954 U.S. Code Congressional and Administrative News, p. 2133 et seq.

[74] In addition, the federal scheme for the provision of cellular service set forth in this order, and principally the goal of introducing nationwide compatible cellular service without undue delay, also provides an independent basis for this Commission having sole jurisdiction over licensing of cellular facilities. Legal authority supporting such federal primacy is clear. As noted earlier, cellular systems can provide both intrastate and interstate communication. Federal primacy where necessary to preserve a federal scheme for the provision of interstate communications has previously been upheld, even when not based upon the FCC's exclusive radio licensing authority. *See Telerent Leasing Corp.*, 45 F.C.C. 2d 204 (1971), *aff'd sub nom. North Carolina Utilities Commission* v. *FCC*, 537 F. 2d 787 (4th Cir.), *cert. denied*, 429 U.S. 1027 (1976); *North Carolina Utilities Commission* v. *FCC*, 552 F. 2d 1036, (4th Cir.), *cert. denied*, 34 U.S. 874 (1977). See also *California* v. *FCC*, 567 F. 2d 84 (D.C Cir.), *cert. denied* 434 U.S. 1010 (1978). (FCC authorization of physically intrastate foreign exchange service overrode state restriction on use of facilities prohibiting such service).

competitive market structure for cellular service. Our licensing scheme requires assurance that the 40 MHz of radio spectrum allocated for cellular service is used effectively and efficiently. The technical standards set forth in this *Report and Order* are the minimum standards necessary to achieve the desired goals and any state licensing requirements adding to or conflicting with them could frustrate federal policy. Similarly, any state franchising regulations requiring demonstration of a general public need for cellular service could adversely affect our frequency allocation scheme or delay the rapid implementation of cellular service, both of which are central elements of the federal design for cellular operations.

83. At this time, however, we are not exercising all of the authority we have to assert federal primacy. The states can continue their complementary role regarding certification of carriers to provide mobile or cellular service. A dynamic state certification program should provide considerable assistance in achieving the objectives of this cellular proceeding. Specifically, such state action could help assure that the most qualified applicants become cellular licensees if it is made expeditiously so that it can be reflected in the FCC's radio licensing proceeding. However, applicants will not be required to secure prior state certification before filing an application for a construction permit with the FCC. *See Regulatory Policies and Procedures* (Docket 20870),69 FCC 2d 398 (1978), *recon. denied*, 80 FCC 2d 294. It is conceivable that a state could delay implementation of cellular service or frustrate the competitive market. structure established in this proceeding by refusing to find more than one cellular applicant in any geographic area qualified to provide service. We do not expect this to be the case. However, in individual cases, the Commission has demonstrated that it can act expeditiously to avoid frustration of federal policy. See *e.g.*, *Heritage Village Church*, FCC 81-184, 46 Fed. Reg. 19319 (March 30, 1981).

3. *Technical Standards*

84. In our *Notice* we identified three purposes to be served by technical standards for cellular systems: (1) definition of cellular mobile radio for purposes of qualifying for cellular mobile radio operating licenses; (2) assurance of compatible operation of equipment on both local and national levels; and (3) maintenance of signal quality and other quality aspects of system performance. We intended to adopt only the minimum standards necessary to accomplish these purposes. We listed a number of cellular system design concepts based on those underlying the developmental program established in Docket No. 18262 and we requested comment on whether changes to these design concepts were necessary.[75] While we recognized that 40 kHz band-

[75] The design concepts, as modified in the *Notice*, are:

(a) a bona fide cellular configuration of base station transmitters and

width would be consistent with our present requirement, we concluded that cellular operations would be accommodated within 30 kHz channel spacing by careful geographic distribution of channel assignments, the result of which would be greater spectrum efficiency. 78 FCC 2d at 1004.

85. The commenters generally support our position in the *Notice* that we adopt the minimum technical standards necessary to accomplish our goals for cellular service. However, they express varying views regarding basic technical standards for cellular systems. For example, ARTS, Motorola, the Electronic Industries Association, Ubon, NECA,[76] and E.F. Johnson are proponents of systems that utilize 30 kHz channels, while Millicom, Peters,[77] and SIRSA prefer 25 kHz channel spacing. Similarly, different signaling formats are preferred by various commenters.

86. *Analysis.* We have carefully reviewed the comments and have determined that minimum standards must be established to insure that our objectives, including system compatibility, are achieved. Therefore, we are amending Part 22 of our Rules to incorporate certain basic technical requirements for cellular systems and are establishing a new

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receivers to cover the proposed service area;

(b) Base station transmitters radiating no more radio frequency power than required to adequately cover each cell;

(c) A radio system fully interconnected with the public landline telephone network and capable of providing a grade of service comparable to that of the landline system;

(d) Narrow band frequency modulation for all voice channels in the radio system, with 30 kHz channel spacing;

(e) Radio frequency channels employed within each cell trunked for greater spectrum efficiency;

(f) For systems in metropolitan areas, the potential for orderly evolution into a highly efficient small-cell configuration capable of handling a large number of subscribers within the allocated 40 MHz of spectrum; and

(g) compatibility with other cellular systems.

78 FCC 2d 1003–4. These guidelines were previously set forth by the Commission, with two differences, 51 FCC 2d at 954–55, 1009. Originally, there was a requirement that base stations be connected together through a common switching and control point using wirelines. We deleted that requirement because we saw no reason to categorically exclude microwave or optical links. Second, we modified radio channel definition (item (d) in the list above) to change from a 40 kHz authorized bandwidth definition to a 30 kHz spacing definition.

[76] NECA is a subsidiary of NEC, manufacturer of the Japanese cellular system, which utilizes 25 kHz channels. NECA's comments, however, support 30 kHz channels, and propose a system design using 30 kHz channels.

[77] Arthur K. Peters is the engineering consultant who prepared NECA's system design proposal using 30 kHz channels. He also filed reply comments on his own behalf advocating the use of 25 kHz channels because, he stated, other countries have adopted a 25 kHz standard.

Subpart K containing specific rules and standards for cellular systems. Significant technical standards and modifications to our Rules are discussed below.

87. *Cellular design concept.* We are adopting a cellular system definition that affords system designers a great deal of flexibility. Under our definition, a cellular system is

> A high capacity land mobile system in which spectrum assigned is divided into discrete channels which are assigned in groups to small geographic cells covering a defined service area. The discrete channels are capable of being reused in different cells within the service area.

This definition does not mean that a cellular system must have multiple cells at the time of initial implementation; in some areas a single cell may initially be all that is called for. Once a multiple cell system is established, however, there must be provision for transferring control of a mobile from cell to cell as it travels through the system. Reuse of channels within a service area is an inherent capability of a cellular system as it grows in capacity over time, but it will not necessarily be an existing feature of all systems. What we have done in defining a cellular system in a flexible manner is to incorporate the basic concepts of cellular design. Thus, any application for a cellular system must include adequate documentation of its compatibility with those concepts, even if features such as reuse are not immediately implemented.

88. *Frequencies.* Frequency assignments for cellular systems will be made from Block A or Block B. These Bocks each contain 333 channel pairs, including 21 channel pairs to be for set-up and control purposes. Channel spacing is 30 kHz. We are not selecting 25 kHz channel spacing for several reasons. First, there has been no developmental or experimental test data submitted in this proceeding indicating the feasibility of cellular operations using 25 kHz spacing in conjunction with the signaling and frequency reuse criteria used by AT&T and Motorola. Even the use of 30 kHz spacing in these systems requires careful placement of adjacent channel transmitting sites, due to the fact that the bandwidth of the signals exceeds 30 kHz under certain signaling conditions. Secondly, the experience in the private radio services with 25 kHz channeling in the 800 mHz band is not particularly instructive. These systems do not have the capability to reuse channels at relatively close distances and do not utilize high-speed digital signaling; the channel usage characteristics will therefore be significantly different than for cellular systems. Thus, if 25 kHz channel spacing were adopted, a lengthy period of further development would be needed before adoption of standards.

89. *Height and power limitations.* The effective radiated power of base stations is limited to 100 watts. The height-power limitation for base stations is 100 watts effective radiated power at 500 feet above average terrain. Those limits were chosen in order to provide a signal level of approximately 39 dbu at a distance of 15 miles, based on the