

**SUMMARY OF STATEMENT OF CHARLES W. ERGEN,  
CEO, ECHOSTAR COMMUNICATIONS CORPORATION BEFORE  
THE ANTITRUST AND BUSINESS RIGHTS SUBCOMMITTEE OF THE  
SENATE COMMITTEE ON THE JUDICIARY  
JANUARY 27, 1999**

Mr. Chairman and distinguished members of this Committee, thank you for inviting me to testify before you today on competition in the subscription video marketplace and the effect our company's pending acquisition of the MCI/News Corp. assets will have on competition in that market. EchoStar is a Direct Broadcast Satellite (DBS) Company that began service in March of 1996. ~~Currently we have 2 million subscribers nationwide.~~ Our company led the way to bring down the price of a DBS dish to under \$200, making it relatively more affordable for consumers nationwide. We have taken numerous other measures to make our product competitive with cable.

EchoStar's acquisition of the MCI/News Corp assets, if approved by the Federal Communications Commission (FCC), will make DBS more competitive with cable. EchoStar seeks authorization to use the 110° W.L. orbital location full-"CONUS" (Continental United States) slot, two satellites to be launched in 1999, and an uplink center located in Gilbert, Arizona which will act as backup to our existing uplink facility in Cheyenne, Wyoming. For the MCI/News Corp. assets, EchoStar will give the two companies non-controlling equity stakes.

The Department of Justice has already provided "early termination" of the EchoStar/News Corp. deal and has urged the FCC to give prompt approval of the deal in order to promote competition in the video marketplace. The FCC in its 5<sup>th</sup> Annual Report on video competition, found that there is still not enough competition to cable and that cable prices have ~~rose by 7.5%~~ compared with an inflation rate of only 1.7%.

The additional spectrum, combined with EchoStar's existing full-CONUS and half-CONUS spectrum, will alleviate the capacity handicap that currently hampers DBS and will enable us to compete vigorously against cable on a more equal footing. Among other things, ~~consumers cite the lack of local signals on DBS packages as the number one reason why they choose to stick with cable or not pick DBS.~~ The additional spectrum will allow us to offer more local programming in more areas of the country.

While essentially moving forward, we believe that transaction alone is not enough to promote competition to cable. Congressional action is key to true competition. We must have reform of the Satellite Home Viewer Act, giving us an unequivocal and full-fledged copyright ~~license to retransmit local signals back into the station's local market.~~ We will also need provisions in the law that directs local television stations to give us their entrance consent, to the extent needed, on fair and equitable terms. And finally, we must have more rigorous enforcement by the FCC of the Program Access laws designed to prevent vertically integrated cable companies from discriminating against DBS and other MVPD providers.

We look forward to working with you, your staff, the members of the full Committee and with the Senate Commerce Committee on the legislation introduced by Senator Hatch (S.247) that would reform the Satellite Home Viewer Act. Both proposed bills relieve some of the unfair restrictions on DBS.

**TESTIMONY OF CHARLIE ERGEN  
BEFORE THE ANTITRUST AND BUSINESS RIGHTS SUB COMMITTEE  
OF THE SENATE COMMITTEE ON THE JUDICIARY  
JANUARY 27, 1999**

Mr. Chairman and distinguished members of this Committee, thank you for providing me the opportunity to testify before you today on competition in the subscription video marketplace and the effect we hope our company's pending acquisition of the MCI/News Corp. assets will have on competition in that market. We would also like to take the opportunity to talk briefly about S. 247, co-sponsored by some of the members of this Committee and introduced last week by Senator Hatch. Passage of that legislation, combined with Commerce Committee legislation, is critical to the success of DBS as a competitor to cable.

My name is Charlie Ergen and I am the founder and Chief Executive Officer of EchoStar Communications Corporation, a Direct Broadcast Satellite ("DBS") company based in Littleton, Colorado. I started EchoStar in 1980 as a manufacturer and distributor of C-Band satellite dishes and grew the company, by the mid-1980's into the largest supplier of C-Band dishes worldwide. I realized, however, that my vision of a dish in every home, school and business in the United States, and true, effective competition to cable, could not be realized with large dishes. Consequently, in 1987, EchoStar filed an application for a DBS permit with the Federal Communications Commission (the "FCC"). EchoStar has launched four DBS satellites since December 1995 and has invested approximately \$2 billion into this technology, working to give consumers a choice to cable.

EchoStar was the first company to drop the price of a dish to below \$200 when the competition was charging \$800 for its product. EchoStar was the first to allow subscribers to pay a low monthly fee as they do with cable. EchoStar was the first to allow consumers to choose the 10 channels they watch the most, then pay for those "a la carte" without having to "buy through" programming they did not want, to get programming they did want. EchoStar was the first company, this past Fall, to say that it guarantees it will not raise prices until the next millennium. These are just some of the measures we have taken to compete vigorously in the marketplace.

**ECHOSTAR'S PLANNED ACQUISITION WILL MAKE THE DBS MORE  
COMPETITIVE WITH CABLE NOW AND IN THE FUTURE**

This past December, EchoStar announced its intentions to acquire from MCI/Worldcom and News Corp. an FCC authorization to use the 110° W.L. orbital location (from which a satellite system can serve the entire continental United States, or "full-CONUS"), two satellites to be launched in 1999, and an uplink center located in Gilbert, Arizona which will act as back up to our existing uplink facility in Cheyenne,

Wyoming. For the MCI/News Corp. assets, EchoStar will give the two companies non-controlling equity stakes.

The spectrum at the 110 W.L. slot, combined with EchoStar's existing full-CONUS spectrum (21 channels at 119 W.L.), and the frequencies at our half-CONUS locations (11 transponders at 61.5 W.L. and 24 transponders at 148 W.L.) will alleviate the capacity handicap that currently hampers DBS companies and will enable us to compete vigorously against cable on a more equal footing. As I will testify, however, while the transaction is necessary to introduce more competition in the subscription video marketplace, it is not enough. Action by Congress is also necessary in the areas of network signal retransmission and program access.

More specifically, with the new spectrum, we hope our company can finally break down what, in the consumer's mind, has been the single greatest obstacle to choosing DBS over cable or switching from cable to DBS. We plan to offer local-into-local service, on a single dish, to between 40 to 50% of the U.S. population. Currently, EchoStar offers limited local-into-local service in thirteen markets. The local service we offer, even if we could make it available to all subscribers, is not perfect. It is a tough sell because it requires customers to put a second dish on their roof. With the new orbital location, consumers in the 20 major metropolitan centers would receive local programming on one dish while consumers in many smaller markets (now unserved with local signals) will be offered a two-dish solution.

Of course, our ability to provide full-fledged local-into-local service is now inhibited not only by our spectrum limitations, but also by regulatory factors – the Satellite Home Viewer Act as it is interpreted by some parties. The need for reform of that legislation is still acute.

With the new spectrum, we will also offer access to the Internet and other data services. The rollout of cable modems and the cable companies' success with this service demonstrates to us that convergence is here. If a company is to be a full service provider, it is no longer enough to offer only video service. The subscriber expects more. The AT&T/ TCI merger is a perfect example. AT&T's aim is to be a one stop solution for the customer — providing television, telephony and data services to the home. While the new spectrum does not allow interactivity, and thus we would still be disadvantaged compared to the mammoth cable companies, the additional capacity will greatly enhance our ability to provide Internet access and data broadband services.

With the additional spectrum, we will also offer High Definition Television ("HDTV") and believe the broader availability of HDTV from satellite will mean a speedier rollout of HDTV service nationwide. The spectrum given to broadcasters for HDTV is a valuable resource and the quick return of the analog spectrum is a worthy public policy goal Congress has set for the nation. DBS is the perfect medium for HDTV. Our boxes are already digital thus eliminating the need for the consumer to buy or lease a costly digital converter box.

**ANTITRUST AUTHORITIES RECOGNIZE THAT  
THIS DEAL WOULD CREATE COMPETITION**

On December 17<sup>th</sup>, just over two weeks after filing the Hart-Scott-Rodino pre-merger notification, the Department of Justice ("DOJ") provided "early termination" of its review of the EchoStar/MCI/NewsCorp deal, and the license transfer application is now under review only by the FCC. Just two weeks ago, in comments filed by the Department of Justice Antitrust Division, the DOJ urged prompt approval of the deal, saying that approval of our request "promises to facilitate new and potentially significant competition between DBS and cable providers, thereby benefiting consumers of MVPD services."

The DOJ comments also stated:

- The relevant market for our service is the MVPD market. DOJ has found extensive evidence of customers switching from cable to DBS, contrasted to the early days of DBS, when subscribers most often came from uncabled areas.
- Approval of the EchoStar/News Corp. deal would eliminate capacity restraints that limit EchoStar's ability to compete with cable because our company would be able to offer more programming in the form of local news, weather and popular network programming.
- DOJ emphatically pointed out that EchoStar should not be required to divest of its holdings at 119° W.L. because market conditions have changed since the FCC enacted a one time only rule at the time MCI and NewsCorp bought the 110° W.L. spectrum at auction four years ago.
- DOJ found that EchoStar, which serves 2 million customers, representing a miniscule 2.5% of the MVPD market, lacks market power in the market.

We have requested that the approval process be put on a fast track and we are optimistic that the FCC will approve our license transfer deal quickly, consistent with DOJ's recommendations. With quick approval we can secure an early launch window and put our plan into action by the middle of the year. With quick approval we can begin to provide the kind of competition the consumer is hungry for. It is important to remember, however, that this transaction will not be a panacea for all the competitive problems of the subscription video market.

**CURRENTLY THERE IS NO EFFECTIVE COMPETITION TO CABLE**

In its Fifth Annual Report to Congress, the Federal Communications Commission reconfirmed that, despite the efforts of competitors such as DBS, cable operators continue

to possess bottleneck monopoly power in the distribution of multichannel video programming.<sup>1</sup> Among the Commission's findings were the following:

- Cable prices soared by 7.3% between June 1997 and June 1998. This compares with an inflation rate of only 1.7%.
- 85% of Multichannel video subscribers receive service from their local franchised cable operator.
- The number of cable subscribers continued to grow, reaching 65.4 million.
- 97.1% of homes are passed by cable.
- Cable penetration in passed homes grew to 68.2%.
- A trend towards regional clustering of cable television operations continued during the course of last year.
- Cable industry ownership remains concentrated at the national level.
- Despite marginal decline in vertical integration in terms of a percentage of cable-affiliated national satellite delivered services, cable MSOs in 1998 owned 50 % or more of 78 networks and had minority stakes in many others.

### **ECHOSTAR'S LOCAL INTO LOCAL PLAN**

I will now give a more detailed account of our local-into-local plans. Independent studies and our experience as a company match the conclusions of the FCC: 8 of 10 people who walk into a satellite dealer's showroom don't buy anything because they cannot get a product they really want.<sup>2</sup> They can't get their local stations. Surveys show seventy percent of the time watching television is spent watching local TV.

In 1998, EchoStar began offering satellite-delivered local network stations to qualified consumers in the Washington, D.C., New York, Atlanta, Dallas, Boston and Chicago, Los Angeles, San Francisco, Phoenix, Salt Lake City, Denver, Miami, and

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<sup>1</sup> In the Matter of Assessment of the Status of Competition in Markets for the Delivery of Video Programming, in CS Docket No. 98-102 (rel. Dec. 17, 1998) ("Annual Report").

<sup>2</sup> See *In the Matter of Assessment of the Status of Competition in the Markets for the Delivery of Video Programming*, in CS Docket No. 97-141 (rel. Jan. 13, 1998) ("Annual Report") at ¶ 58 n. 201.

Pittsburgh markets. With the additional spectrum and the two new satellites to be launched in 1999, we will expand to Sacramento, Portland, Seattle, Las Vegas, St. Louis, Minneapolis, and San Diego, as well as offer service to Alaska and Hawaii. In each of these markets we offer the four network stations, and in some cities a couple of independents as well. While we would love to offer even more local signals, we strongly believe our plan will serve the public interest by offering for the first time to many consumers in those markets a true choice between our service and cable. At the same time, while the additional spectrum we propose to acquire will allow us to serve many more markets, this would not be possible if DBS distributors were to become subject to unreasonable, and probably unconstitutional, must-carry obligations.

How many markets we are able to serve will ultimately depend on how and when must-carry rules are implemented. We believe must-carry, if imposed at all, should be pegged to a penetration test in each market. Must-carry should not apply to a satellite provider until it gains a larger share of the MVPD market.

Of course, we wish we had the capacity to serve all markets and carry all local stations in each market. As a business, we would never want to exclude a programming channel that would gain us yet another subscriber. But even with the additional spectrum, we will not have the space. On the other hand, we believe that the service we offer will give the customer enough of a choice to allow consumers to consider us an adequate substitute to cable. The marketplace will determine whether we are right but it cannot determine so until the law makes it fully possible.

#### **SHVA REFORM IS ANOTHER CRITICAL COMPONENT TO CREATING COMPETITION TO CABLE**

Assuming we are successful in winning approval at the FCC, there is another key component to DBS's ability to become competitive with cable. We need you and your colleagues to take legislative action. A single dish solution is no good if only a small fraction of viewers are qualified to receive the local channels, as would be the case under some parties' interpretation of the law. Indeed, EchoStar's ability to retransmit local signals to customers is currently subject to several limitations. We wholeheartedly endorse the legislation Senator Hatch introduced last week that would give DBS a permanent compulsory license to retransmit local signals. That legislation would also eliminate a blatantly unfair provision of the current law: that consumers must wait until 90 days after they have disconnected cable to subscribe to network signals.

I'd like to take this opportunity to thank you the members of this Committee and the dedicated staff that serves you for all of the hard work you have done to move legislation forward last year. The Senate Judiciary Committee, working closely with the Senate Commerce Committee, made a valiant effort at the end of last session in the face of the intense competing interests of a number of different industries and factions within

those industries. Early passage of legislation is more critical than ever for our industry and our company.

We respectfully urge you to work with Senator McCain and others on the Commerce committee on the necessary companion legislation that would set out the rules for the local into local license.

### **FAIR RETRANSMISSION CONSENT AGREEMENTS ARE ESSENTIAL**

Our hope is that when we unequivocally win the full-fledged right to provide local stations to the local market, the stations we seek to carry in each of these markets will give us retransmission consent agreements to the extent required. We have been seeking those agreements with broadcasters nationwide. We believe the broadcaster has, to the extent required, the right to control over its signal, but our lack of market power as an industry and a company means broadcasters have no incentive to give us fair terms. Conversely, the cable industry's market power translates into great leverage over whether the broadcasters deal with us enthusiastically or not. In seeking agreements with the broadcasters, we have had numerous executives tell us that they would like to give us agreements, but they have declined because they fear angering the cable companies they deal with. We urge you in your capacity as antitrust overseers to make sure there are provisions, in any legislation and all legislation passed, that will make sure that DBS is able to get retransmission agreements on terms that are comparable to those enjoyed by cable operators, terms that are fair and equitable.

### **DISTANT NETWORK SIGNALS**

While EchoStar hopes to serve close to half the population with its local-into-local service, consumers who cannot get a signal over the air from their local broadcast station will continue to rely on distant network signals. The FCC is scheduled to release guidelines on who can and cannot receive a signal over the air and we look forward to having a more clear delineation of who is eligible for distant network signals and who is not. We believe it is very important for these guidelines to ensure distant service for every consumer that cannot be confidently predicted to receive an adequate signal over the air most of the time, and for every consumer who cannot receive such a signal at the television set with his/her actual equipment as opposed to an extravagant antenna system.

### **PROGRAM ACCESS**

Access to programming is the third leg of the stool critical to the support of our business. Without access – on fair and consistent terms – to the popular channels that are controlled, produced or otherwise heavily influenced by cable EchoStar will not have a chance to be price-competitive with cable. Unfortunately, problems with the conduct of cable-affiliated vendors show no sign of abating, and the Commission's enforcement of the program access rules may in fact have become even weaker than it was.

In the six months since I last testified before Congress, and shortly after EchoStar and MCI/News Corp announced this deal, Speedvision, a cable-affiliated programmer, withdrew its two programming channels from the DISH network and caused the screens of 23,000 EchoStar subscribers to go dark. Speedvision based its withdrawal on the pretext that EchoStar breached its contract with Speedvision. EchoStar has sued Speedvision before the Commission, requesting access to programming.

In October, the FCC's Cable Services Bureau ruled, in a proceeding brought by another DBS company, that the cable operator, Comcast was not subject to the Congressional prohibition on refusals to deal, following its decision to switch to terrestrial transmission of Comcast's valuable Philadelphia sports programming. The Commission made a perfunctory determination, without much of the necessary evidence, that Comcast's decision to withhold its programming, which had been described by Comcast itself as a "purposeful decision related to competition," was a legitimate business decision, not subject to the program access law. Furthermore, more than one year after EchoStar had filed a discrimination complaint against Fox Sports, the Commission dismissed the complaint on the ground that it was "time-barred." The Bureau's decision chose to narrow the Commission's rule on the one year statute of limitations and made it more difficult for competitors to sue on discrimination, particularly when they cannot know the terms enjoyed by cable operators.

We hope the Antitrust Subcommittee and staff will continue to keep a watchful eye on program access violations as DBS continues to grow.

#### SUMMARY

DBS as an industry has to be able to say to potential subscribers "pull out the cable because we can give you what they can give you."

We urge you and your colleagues in the house to tell the FCC it must act quickly on the EchoStar/MCI license transfer so competition to cable can be enhanced this year. We think you should let the consumer decide whether our local into local service — limited though it is — is a product that makes DBS an adequate substitute to cable. Where local signals are not available, customers who cannot get their local channels off air must continue to receive distant network signals. And finally, please encourage the FCC to enforce the program access laws so that the lifeblood of competition, programming, can be offered to consumers at a price that is comparable to cable.

Thank you again for all of your hard work, and that of your staff, and for affording me the opportunity to testify before you today.

**SUBCOMMITTEE ON COURTS AND INTELLECTUAL PROPERTY**  
**COMMITTEE ON THE JUDICIARY**  
**U.S. HOUSE OF REPRESENTATIVES**  
**OVERSIGHT HEARING ON**  
**THE COPYRIGHT LICENSING REGIMES COVERING RETRANSMISSION OF**  
**BROADCAST SIGNALS**

**Thursday, October 30, 1997**

**Room 2237 Rayburn Building, 10:00 AM**

**Goodmon Testimony**

**Statement of Capitol Broadcasting Company, Inc.  
Before the Subcommittee on Courts and Intellectual Property  
of the Committee on the Judiciary, U.S. House of Representatives  
Hearing on the Copyright Licensing Regimes Covering  
Retransmission of Broadcast Signals License  
October 30, 1997**

Good morning, and thank you for inviting me to appear at today's hearing. I am James F. Goodmon, President of Capitol Broadcasting Company, Inc., and I have recently been appointed to President Clinton's Advisory Committee on Public Interest Obligations of Digital Broadcasters. Capitol Broadcasting Company is a diversified communications company that owns and operates radio and television stations, including a high definition television station, WRAL-HDTV, Raleigh, North Carolina. In addition to its radio and television holdings, Capitol Broadcasting Company also owns a number of subsidiaries that are involved in other innovative communications services.

My primary purpose today is to inform you that the technology for retransmitting local signals via satellite is now available. "Local TV on Satellite" is our plan to distribute via satellite all over-the-air, full power, commercial and noncommercial television stations within a given station's designated market area ("DMA"), as defined by Nielsen. We intend to make available to Direct Broadcast Satellite ("DBS") providers the opportunity to market a local station package to consumers located within those stations' DMAs. Local television stations that choose to participate in our plan will be compensated for making their broadcast signals available for rebroadcast. Our engineers have developed a technical plan, using spotbeam technology, that will make Local TV on Satellite operational in the year 2000. We would operate a satellite in the Ka-band with 61 spotbeams that can cover the continental United States, Hawaii, and Alaska. Under our plan, consumers will be able to receive all of the current DBS signals, as well as, the local television signals with one 24-inch dish. Phase I of Local TV on Satellite is expected to accommodate 1700 NTSC signals and HDTV prime time and special event network feeds.

We believe our project is unique because we plan to carry ALL full-powered television stations in ALL markets. We, as well as, many other broadcasters believe it is imperative that, if one station within a market is carried by a satellite provider, then all stations within that market must be carried.

Finally, from a public policy standpoint our plan is good for consumers because it will give them more choices in the multichannel video programming distributors' ("MVPD") marketplace. Our plan, in

keeping with Congress' intention, will make DBS fully competitive with cable on a nationwide basis because we intend to provide ALL local television stations in ALL markets. Indeed, market research shows that the primary obstacle for DBS in competition with cable is the lack of local television signals on DBS. Our plan solves this problem. Furthermore, our plan will enable DBS subscribers to receive local originated programming such as local weather, local news, local sporting and charity events, and public affairs programming, all of which serves the public interest. WAS1-301496

**STATEMENT OF  
CAPITOL BROADCASTING COMPANY, INC.  
BEFORE THE  
SUBCOMMITTEE ON COURTS AND INTELLECTUAL PROPERTY  
OF THE  
COMMITTEE ON THE JUDICIARY  
U.S. HOUSE OF REPRESENTATIVES  
HEARING ON  
THE COPYRIGHT LICENSING REGIMES COVERING  
RETRANSMISSION OF BROADCAST SIGNALS LICENSE**

**OCTOBER 30, 1997**

Good morning, and thank you for inviting me to appear at today's hearing. I am James F. Goodman, President of Capitol Broadcasting Company, Inc., and I have recently been appointed to President Clinton's Advisory Committee on Public Interest Obligations of Digital Broadcasters. My family has been in the broadcast business since 1937. Capitol Broadcasting Company is proud to be a part of the broadcasting industry, and has grown over the years along with the industry. Last year, we were the first broadcaster in the nation to receive an authorization for an experimental high definition television station from the Federal Communications Commission. The high definition television station operates as WRAL-HDTV.

Today, Capitol Broadcasting Company is a diversified communications company that owns and operates broadcast stations WRAL-TV and WRAL-FM in Raleigh, North Carolina, and WJZY-TV in the Charlotte, North Carolina market. In addition to its radio and television stations, Capitol Broadcasting Company also has a number of subsidiaries that are engaged in other innovative communications services. Our subsidiary, Microspace Communications Corporation, is the largest provider of broadcast data and audio satellite services in the world. Other subsidiaries include Capitol Information Services, Inc., which provides high-speed connections to the Internet and graphic design services for Internet sites, and Capitol Sports Network, which provides play-by-play coverage of college football and basketball games, coaches' shows, and NFL and NASCAR coverage. Capitol Broadcasting Company also owns two minor league baseball teams. One of the teams, the Durham Bulls Baseball Club, Inc., will become a AAA affiliate of the Tampa Bay Devilrays in 1998. On September 6, 1997, WRAL-HDTV broadcast the first college football game in digital television via satellite.

With Capitol's experience in broadcasting and satellite services, we have recognized the need to provide DBS subscribers with local television stations on their DBS reception systems. In its Report on Retransmission of Broadcast Signals (August 1, 1997), the Copyright Office stated that it "recogniz[ed] . . . that the technology for retransmitting local signals via satellite is not widely available." **MY PRIMARY PURPOSE TODAY IS TO INFORM YOU THAT THE TECHNOLOGY IS HERE. "LOCAL TV ON SATELLITE" IS OUR PLAN TO DISTRIBUTE VIA SATELLITE ALL OVER-THE-AIR, FULL POWER, COMMERCIAL AND NONCOMMERCIAL TELEVISION STATIONS WITHIN A GIVEN STATION'S DESIGNATED MARKET AREA ("DMA"), AS DEFINED BY NIELSEN.**

We intend to make available to Direct Broadcast Satellite ("DBS") providers, such as DirecTV, USSB, PrimeStar, and EchoStar, the opportunity to market a local station package to consumers located within those stations' DMAs. Local television stations that choose to participate in our plan will be compensated for making their broadcast signals available for rebroadcast. Local TV on Satellite will combine local television stations into a market-by-market package for distribution to the DBS providers.

The DBS providers will include individual market packages within their programming services and the particular local station signals made available to a subscriber will be determined by the subscriber's address.

Our engineers have developed a technical plan, using spotbeam technology, that will enable Local TV on Satellite to be operational in the year 2000. We would operate a satellite in the Ka-band which would provide coverage to the continental United States, Hawaii, and Alaska, and would be served by 61 spot beams, each spot beam being directed to a different part of the United States. We intend to locate the satellite at an as yet undefined orbital slot between 101° and 119° and we anticipate a satellite with a 12-year life. We plan for 159 regional sites from which stations located in the same geographic area would be uplinked. Under our plan, consumers will be able to receive all of the current DBS signals, as well as, the local television signals with one 24-inch dish.

We have issued our Request for Quotations ("RFQs") to manufacturers for construction of the satellite and its sub-systems, and are currently reviewing the responsive RFQs with our selection expected to be made in early 1998. In addition, at the same time, we are directing significant attention to developing a sound business plan to permit this project to be brought to fruition in the most expedient manner. Again, we expect Local TV on Satellite to be operational by the year 2000. At that time, Phase I of Local TV is expected to accommodate 1700 NTSC signals and HDTV prime time and special event network feeds.

I would like to note at this time that while we will need legislation to get this project "off the ground," I am not here today for the purpose of presenting legislation or seeking legislation. We are developing the specific legislation that we believe to be necessary and intend to submit the proposed legislation at the commencement of the next Congressional session in January 1998. We are mindful of your busy schedules but will seek passage of the legislation at that time.

We have shared our plan with the DBS and broadcast industries in order to confirm the need for our project, as well as to determine that we could achieve sufficient interest by broadcasters in making their signals available for this purpose and DBS providers in marketing local signals. We have discussed our project with each of the current high-powered DBS providers. And, we have made presentations to The Association for Maximum Service Television, Inc. ("MSTV") and The National Association of Broadcasters ("NAB"), as well as many television group owners.

We believe our project is unique because we plan to carry ALL full-powered television stations in ALL markets. We, as well as, many other broadcasters believe it is imperative that, if one station within a market is carried by a satellite provider, then all stations within that market must be carried. Our plan to carry ALL television stations in ALL markets is consistent with the comments submitted by The Network Affiliated Stations Alliance ("NASA") and the NAB in the proceedings on retransmission of broadcast signals before the Copyright Office. In its comments, NASA stated "no changes should be made in the copyright statute for extension of the compulsory license to satellite companies unless it is accompanied by a statutory must carry requirement." NASA Comments at 27. Similarly, NAB said "Congress could condition the availability of a compulsory license for the satellite retransmission of television stations into their local markets on the carriage of all stations licensed to the market." NAB Comments at 11.

Finally, from a public policy standpoint our plan is good for consumers because it will give them more choices in the multichannel video programming distributors' ("MVPD") marketplace. Our plan, in keeping with Congress' intention, will make DBS fully competitive with cable on a nationwide basis because we intend to provide ALL local television stations in ALL markets. Indeed, market research shows that the primary obstacle for DBS in competition with cable is the lack of local television signals on DBS. Our plan solves this problem. Furthermore, our plan will enable DBS subscribers to receive local originated programming such as local weather, local news, local sporting and charity events, and public affairs programming, all of which serve the public interest.

I thank you for having given me the opportunity to tell you about Local TV on Satellite and I would be pleased to answer any questions at this time. WAS1-300900

**Exhibit 4**  
**King Ranch Test Report**

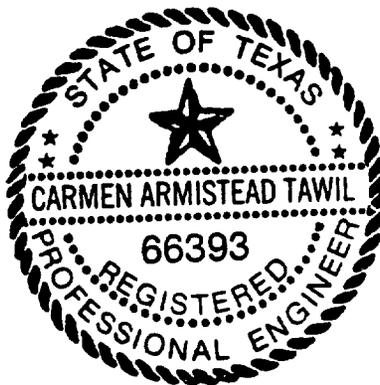
**Experimental Testing Report**

**1997 Kingsville Tests**

**Submitted by DCE, Inc.  
On Behalf of Northpoint Technology  
To: FCC Experimental Licensing Branch  
Date: January 8, 1998**

**PROGRESS REPORT  
WA2XMY**

**PREPARED BY:  
DIVERSIFIED COMMUNICATION ENGINEERING, INC.  
CARMEN A. TAWIL, P.E.  
VICE PRESIDENT**



PROGRESS REPORT  
TO THE FEDERAL COMMUNICATIONS COMMISSION  
ON EXPERIMENTAL LICENSE WA2XMY

PURPOSE AND BACKGROUND

In November of 1995, Diversified Communication Engineering, Inc. (DCE) applied to the Federal Communications Commission (FCC) for an Experimental License to conduct tests in order to verify the validity of a concept of usable, simultaneous terrestrial and satellite co-channel transmissions. Specifically, the Experimental License was needed to investigate whether terrestrially broadcast signals could be transmitted and received on the same frequencies as Direct Broadcast Satellite (DBS) signals without causing interference into any DBS receivers.

In brief, DCE's "Northpoint" technology relies on the premise that terrestrial transmitters can be deployed in a manner that uses directional antennas, in conjunction with known satellite positions, to provide terrestrial signals to the satellite receivers. In effect, any terrestrial transmitter will have associated with it an "exclusion zone," an area where signals from the terrestrial transmitter will cause harmful interference to DBS reception, and a "service area," an area where signals from the terrestrial transmitter will be sufficiently strong to be received. Northpoint technology relies upon using the known "look angle" and orientation of the DBS receiver to create, effectively, a land-based satellite "orbital slot." By using directional antennas and orienting the transmissions in a southerly direction, Northpoint technology was developed to minimize the "exclusion zone" for a given "service area." The determination of the exclusion zone size and the resulting proportional service area were the primary concerns to be addressed by the instant Experimental License.

The original Experimental License application requested that the tests be conducted in Austin, Texas which is where DCE maintains offices. After a meeting with FCC staff, the Experimental License application was amended to specify a test site on the King Ranch near Kingsville, Texas. The King Ranch is a large privately owned tract of land in a remote, rural area of south Texas and was chosen in order to address FCC concerns that the test not interfere with existing DBS subscribers.

On July 8, 1997, the Experimental License, call sign WA2XMY, was granted and shortly thereafter the equipment needed to conduct the test was ordered. In order to establish independent verification of the test and results, the nationally recognized engineering and communication services firm, Comsearch, was engaged to perform the tests.

The tests were conducted the week of October 6, 1997. As required by conditions of the Experimental License, notices were placed in every issue of the twice weekly newspaper which serves the area, The Kingsville Record, for two weeks preceding the test and also

during the week of the test, notifying DBS subscribers about the test and giving a local phone number to call with interference complaints. Also, as required, a mailing went out the week preceding the test to all homes within the predicted potential interference area detailing the days and times of the test and giving a local phone number to call in case of interference. A condition of the Experimental License was the requirement that if any DBS subscriber experienced interference during the testing, the transmitter would immediately be shut down and the complaint would be investigated. No interference calls were received during the tests.

#### INTERFERENCE CRITERIA

On April 11, 1994, DirecTV submitted a report to the FCC entitled "Terrestrial Interference in the DBS Downlink Band". The DirecTV report represents the state of the art prior to the development of Northpoint technology. We have used it as a reference source for certain technical parameters and as a measure of the benefits of Northpoint technology.

The DirecTV report analyzed the impact of *indiscriminately positioned* (with respect to DBS users) relatively high power two-way terrestrial microwave links in the DBS band. Since this report analyzed the impact of existing microwave paths that were in use by third parties, DirecTV was not able to dynamically control the transmitter power output or the transmit antenna direction to more closely establish an actual interfering signal level threshold.

The referenced report stated that "A complete loss of video transmission...will result when the interfering sources produce power levels that approach 10 dB below that of the desired satellite transponder signals at the Low Noise Bandwidth (LNB) input." Thus, it was reported that a Carrier to Noise + Interference ratio ( $C/(N+I)$ ) of 10 dB is required to avoid "...complete loss of video transmission". This same report, while discussing an interference example, stated that the "received  $C/(N+I)$  is less than 5 dB, well below the demodulator lock threshold at approximately 8 dB of  $C/N$ ".

The DirecTV report further stated that "(s)evere rain attenuation or interference will cause loss of picture. This will occur at carrier to noise plus interference ratios below 5 to 8 dB. The exact threshold point depends on the particular hardware's performance and mode of operation."

The typical example in this report listed a 1 watt terrestrial transmitter with a 6' diameter parabolic transmit antenna resulting in an Effective Isotropic Radiated Power (EIRP) of 45 dBw, orientated in a northerly transmit direction. The system described in this example would cause interference to DBS users whose dishes are pointed within or close to the boresite of the transmit antenna. However, it was a purpose of the instant Experimental License operations to demonstrate Northpoint technology -- i.e., that a

properly engineered (both in EIRP and transmit direction) terrestrial transmitter can co-exist with and augment the DBS services by providing local insertion possibilities.

A real world example used in the DirecTV report stated that a northerly orientated, 48 dBw EIRP terrestrial link which passes by the DirecTV headquarters in Los Angeles at 12 degrees off center line to the beam peak "... does not cause measurable degradation to the overall DBS link  $C/(N+I)$ ." In contrast, the technology implemented under this Experimental License, Northpoint uses a directional transmit antenna orientated in a southerly direction and an EIRP that is more than 40 dB lower than the transmitter referenced in the DirecTV report.

As a supplement to the Experimental License application, DCE engaged DeLawder Communications, Inc. to prepare a report that analyzed the potential interference of the Northpoint test utilizing the interference criteria as stated in the referenced DirecTV report. The DeLawder report included coverage maps, using the most conservative  $C/(N+I)$  ratio required according to the report of 10 dB, indicating where a potential "exclusion zone" or interfering area would occur around the transmit site for both DirecTV and EchoStar DBS subscribers.

One of the main purposes of the Experimental License test was to verify empirically the interference criteria reported in the DirecTV report to the FCC, and thus establish a known exclusion zone, with a corresponding practical service area, for a particular transmit EIRP and transmit direction. The measurement criteria used to establish interference levels included feeding the output of the LNB to both the spectrum analyzer and the receiver/decoder with a power divider. In this way, power measurements could be read and recorded while the DBS receiver/decoder was subjected to a known interfering signal. At the same time that measurements were being made on the spectrum analyzer, a visual observation of the DBS receiver/decoder output on a video/audio monitor was made. (See Comsearch Figure 2.5-1). The EIRP of the interfering signal was then lowered until the DBS receiver was able to achieve demodulation lock and a good, no freeze-frame, video/audio signal. By analyzing the spectrum analyzer traces for both the satellite and the terrestrial signal it was determined that the actual  $C/(N+I)$  required for demodulation lock and no visually noticeable degradation of the DBS signal was actually just under 5 dB.

A preferable way of determining objectionable interference, performing a Bit Error Rate (BER) test, would require cooperation from the DBS operators. The DBS operators would insert a test signal into one of their satellite signals and a comparison would be made of the resultant errors added by the terrestrial signal versus the BER without a terrestrially transmitted co-channel. The next phase of tests will therefore attempt to include the cooperation and participation of DBS providers to better determine any possible impact on their subscribers.

## TEST CONDITIONS

As previously stated, the test was conducted in a very rural environment and with almost flat terrain. Therefore, it was not possible to test at this location for the impact of building and other structural reflections that could possibly affect the outcome of the test. Thus, DCE plans to conduct follow-up tests in a more urban environment to test for multi-pathing due to reflections.

In terms of weather, torrential, record breaking rains and dense cloud cover were experienced throughout the week of the test. While this made for very unpleasant work conditions, it provided an ideal environment for testing terrestrial interference into DBS receivers by providing real time rain attenuation conditions. Atmospherically, this weather was the "worst case" for Northpoint technology, because of the reduced margin for DBS signal reception.

## EQUIPMENT USED FOR THE TEST

The following transmission and reception equipment were used during the test:

- 1) 1 Watt LNR transmitter w/digital encoder, QPSK modulation and Power Level Control
- 2) Seavey Engineering custom horn antenna w/10 dB gain, 110 degree horizontal beamwidth and 17 degree vertical beamwidth
- 3) 70' of Andrew EW127 waveguide with WR75 flanges
- 4) RCA DBS antenna and LNB
- 5) DirecTV DBS receiver/decoder
- 6) EchoStar DBS receiver/decoder
- 7) Tandberg TT1200 MPEG2-DVB receiver/decoder
- 8) Sony color video/audio monitor

The test equipment utilized included the following:

- 1) Tektronix 494P spectrum analyzer w/C5C camera

- 2) Hewlett-Packard HP8672A synthesizer
- 3) Hewlett-Packard HP436A power meter w/8481A sensor
- 4) Amplica AXM 545302 LNA
- 5) Ailtech 91892-1 reflector w/94614-1 horn w/34 dB gain at 12.5 GHz, 4 degree beamwidth
- 6) 25' and 10' of Andrew FSJ4 1/2" cable
- 7) 2 way power divider

## TEST SETUP

The Comsearch Senior Field Engineer (Comsearch Engineer) first calibrated the LNR transmitter output power and verified that the transmitter had an output level at full power of 29 dBm. See Comsearch Figure 2.2-2. The transmit antenna was then connected to the transmitter with 70 feet of waveguide and WR75 flanges with a resulting estimated line loss of 2.5 dB. See Comsearch Figure 2.2-3. The transmit antenna was mounted on a boom lift which was then elevated to 52' AGL, and positioned on a center azimuth of 180 degrees true, with horizontal polarity.

The Comsearch Engineer then calibrated the Comsearch 12.5 GHz Test System utilizing both the 25' and the 10' cables and established an isotropic top reference on the spectrum analyzer. See Comsearch Figure 2.3-3 & Figure 2.3-4. The Comsearch Test System would be used at each test site to establish and verify the isotropic received signal level (RSL) from the transmitter with line-of-sight conditions.

In order to determine the effect of any testing on the DBS systems, it was necessary to determine which channel or channels would be impacted by a particular transmit frequency. Because neither DirecTV nor EchoStar will release channel loading information, the test channels affected were determined empirically. Prior to arriving on location to conduct the test, the Comsearch Engineer performed tests on a DirecTV DBS system to determine channel loading information and determined that 12470 MHz was near mid-transponder for the DirecTV transponder that carries Channel 242. The test frequency and channel affected for EchoStar were determined in the field during testing and it was determined that 12460 MHz was near mid-transponder for the EchoStar transponder that carries Channel 220. Since the DBS modulation is TDMA, an interfering signal in any portion of the transponder will affect all channels on that transponder equally. Thus, if one channel experiences interference, all channels are similarly affected. See DirecTV's "Terrestrial Interference in the DBS Downlink Band", Section 2.4.

Based upon these results, when testing the DirecTV DBS system, the terrestrial transmitter was tuned to 12470 MHz and perceptible interference was observed on Channel 242. When testing the EchoStar DBS system, the terrestrial transmitter was tuned to 12460 MHz and perceptible interference was observed on Channel 220.

For the test site geographic location, in order to receive DirecTV, the DBS antenna must be positioned at an elevation of 58 degrees and an azimuth of 186 degrees. In order to receive EchoStar, the DBS antenna must be positioned at an elevation of 56 degrees and an azimuth of 205 degrees.

During the tests, the terrestrial transmitter was set at 8 MHz bandwidth, the satellite carriers used a bandwidth of 24 MHz, and the spectrum analyzer resolution bandwidth was set to 1 MHz. A correction factor of  $10 \times \log(\text{Signal Bandwidth}/\text{Resolution Bandwidth})$ , expressed in dB, is therefore required for the spectrum analyzer display. The resulting correction factor for the 8 MHz signal was therefore 9 dB, while the correction factor for the 24 MHz signal was 13.8 dB. Thus, when the two signals appeared on the spectrum analyzer at apparently the same power level, they were actually 4.8 dB apart. (See Comsearch Sections 1.3 & 4.1)

## TEST PROCEDURE AND RESULTS

Once the transmitter and the Comsearch Test System were calibrated, the test measurements were ready to begin. The first test location was chosen 1 mile due south of the transmit site with clear line-of-sight to the transmitter. (Comsearch reference site 7, See Comsearch Figure 2.6-1). With the terrestrial transmitter turned off, the DirecTV system was aligned and was set to peak performance using the display on the spectrum analyzer. With the DirecTV system peaked and the output of the receiver/decoder connected to a video monitor, the terrestrial transmitter was then turned on to full power of 29 dBm (36.5 dBm EIRP) and was set at 12470 MHz. The terrestrial RSL was determined to be -82 dBmi at this location.

This site was well within the estimated DirecTV exclusion zone as calculated by DeLawder utilizing the DirecTV interference criteria, the look angle for DirecTV DBS subscribers at this location and the published receive antenna characteristics included in the DirecTV report. (See DirecTV Figure 2.3-1). However, no interference was observed in the DirecTV DBS signal with the terrestrial signal at full transmit power of 29 dBm (36.5 dBm EIRP). (See Comsearch Figure 3.1-11(A)).

For EchoStar, this first site at 1 mile was also well within the predicted exclusion zone. Interference was observed in the EchoStar DBS receiver/decoder at full power but was eliminated by lowering the terrestrial transmitter power level. (See Comsearch Figure 3.1-11(B)).

With such promising results at the 1 mile site, it was decided to choose the second test site (Comsearch reference site 8) at 1/4 mile due south of the transmitter site. Since the EchoStar DBS receiver/decoder was more susceptible to interference in this direction, the EchoStar DBS receiver set up was used to determine the 1/4 mile transmit EIRP that would not cause noticeable interference. It was determined that a transmit power of 5 dBm (12.5 dBm EIRP) did not cause noticeable interference into the EchoStar DBS receiver/decoder at 1/4 mile at an azimuth of 0 degrees to the transmitter. (See Comsearch Figure 3.1-13 (A)). By raising the transmitter output power to 7 dBm (14.5 dBm EIRP) with a resulting C/(N+I) of less than 3 dB, the EchoStar DBS receiver/decoder could not achieve demodulation lock. (See Comsearch Figure 3.1-13 (B)).

Based upon transmit power yielding an "exclusion zone" of 1/4 mile (1320'), DCE then decided to conduct tests at a site that was a distance of approximately 10 miles from the transmitter (Comsearch reference site 13, See Comsearch Figure 2.7-1), with the transmitter power output set at 5 dBm (12.5 dBm EIRP) to see if a usable terrestrial signal could be received. Terrestrial signal reception and the resulting video/audio quality proved to be excellent at this distance and power, even with significant power lost in foliage blockage due to the fact that the transmitter was only 52' AGL and the receive antenna was at 9' AGL. (See Comsearch Figure 3.1-22 (A)). It is very likely that with line-of-sight conditions, a practical service area could extend well beyond 10 miles.

Additional test sites were selected at different azimuths around the transmitter with RSL readings taken and interference tests performed on the DirecTV and EchoStar DBS systems. Comsearch reference site 4, was located 1.19 miles (6330') from the transmitter at an azimuth of 123 degrees. This site was outside of the main antenna beamwidth - the 3 dB point being at an azimuth of 125 degrees from the transmitter. This site had a terrestrial RSL of -96 dBmi at full transmitter power output of 29 dBm (36.5 dBm EIRP). (See Comsearch Figure 3.1-5 (A)). This transmitter power level caused no perceptible interference into either the DirecTV or the EchoStar DBS receivers/decoders. (See Comsearch Figures 3.1-6 (A) & (B)).

Comsearch reference site 5, located at 1.4 miles (7400') from the transmitter at an azimuth of 156 degrees from the transmitter had a RSL of -87 dBmi at full transmitter power. (See Comsearch Figure 3.1-7 (A)). There was no perceptible interference into the EchoStar receiver/decoder at this power level. (See Comsearch Figure 3.1-8 (B)). However, there was interference into the DirecTV receiver/decoder. In order to eliminate the interference into the DirecTV receiver/decoder, the transmitter output power was reduced to 20 dBm (27.5 dBm EIRP). (See Comsearch Figure 3.1-8 (A)). This reduced transmit power level is still 15 dB higher than what was needed to achieve a good quality signal at almost 10 miles.

Comsearch reference site 3, located at 1/4 mile (1320') from the transmitter at an azimuth of 143 degrees had a RSL of -73 dBmi at full transmitter power. (See

Comsearch Figure 3.1-3 (A)). It was necessary to go to 11 dBm transmitter power output (18.5 dBm EIRP) in order to not interfere with DirecTV and 9 dBm transmitter power output (16.5 dBm EIRP) to not interfere with EchoStar. (See Comsearch Figures 3.1-4 (A) & (B)). Once again, these transmitter power output levels still exceed what is needed to achieve a service area of at least 10 miles.

Comsearch reference site 9, located 600' from the transmitter at an azimuth of 250 degrees from the transmitter was outside of the main beamwidth of the transmit antenna by 15 degrees. The terrestrial RSL at this site was -96 dBmi at a transmitter power output of 9 dBm (16.5 dBm EIRP) and did not cause perceptible interference into either the DirecTV or the EchoStar receivers/decoders. (See Comsearch Figures 3.1-15 (A) & (B)).

Since the DBS antennas must be pointed in a southerly direction, four test sites north of, and within close proximity to, the transmitter site were chosen to analyze the impact of the terrestrial signal on the DirecTV and EchoStar systems. Comsearch reference site 2 was located 1800' at an azimuth of 42 degrees from the transmitter site. The RSL at this site was -92 dBmi at full transmitter output power of 29 dBm (36.5 dBm EIRP). (See Comsearch Figure 3.1-1 (A)). Neither the DirecTV nor the EchoStar DBS receivers/decoders experienced interference at full transmitter power output. (See Comsearch Figures 3.1-2 (A) & (B)).

Comsearch reference site 10 was located 610' from the transmit site at an azimuth of 312 degrees. This site had a terrestrial RSL of -85 dBmi at full transmitter power output of 29 dBm (36.5 dBm EIRP). (See Comsearch Figure 3.1-16 (A)). At full transmitter power output, there was no interference to the DirecTV or the EchoStar DBS receivers/decoders. (See Comsearch Figures 3.1-17 (A) & (B)).

Comsearch reference site 11, located 1400' from the transmit site at an azimuth of 344 degrees had a terrestrial RSL of -87 dBmi at full transmitter power output of 29 dBm (36.5 dBm EIRP). (See Comsearch Figure 3.1-18 (A)). There was no interference to either the DirecTV or the EchoStar DBS receivers/decoders at full transmitter power output. (See Comsearch Figures 3.1-19 (A) & (B)).

Another site, Comsearch reference site 12, was located 1100' directly north of the transmitter site. The terrestrial RSL at this site was -84 dBmi at full transmitter output power of 29 dBm (36.5 dBm EIRP) and once again no interference was experienced by the DirecTV or the EchoStar DBS receivers/decoders. (See Comsearch Figures 3.1-20 (A), 3.1-21 (A) & (B)).

## CONCLUSIONS

While further testing is still needed, the basic concept of the Northpoint technology, transmitting terrestrially on co-channel satellite frequencies, appears to be viable as long as the terrestrial station is properly engineered. This first stage of testing demonstrated that as long as a Carrier-to-Interference ratio of at least 4.8 dB was maintained between the satellite signal and the terrestrial signal (with the terrestrial signal being the weaker signal) then there would be no perceptible interference into the DirecTV or EchoStar DBS systems. However this ratio is achieved, whether by antenna receive characteristics, power level adjustment, transmit antenna directionality or a combination of all of these, the end result is the same if the ratio is maintained - harmonious coexistence of co-channel terrestrially broadcast signals and satellite signals.

The tests clearly demonstrate that in a rural environment with no multi-pathing problems, a service area in excess of 10 miles could be achieved while maintaining an exclusion zone of less than 1/4 mile (1320'). Now that minimum required Carrier-to- Interference ratios are empirically known, and the size of the exclusion zone for certain power levels is known, further testing in a more urban environment can be accomplished without harmful interference to DBS service. In addition to the effect of multi-pathing, tests need to be conducted to determine the effect of different terrestrial transmit bandwidths on the DBS subscriber systems.

While further testing is of course necessary, the feasibility of Northpoint technology has been demonstrated. Since the Northpoint technology can be used to transmit terrestrially in the DBS band without causing interference to DBS subscribers, locally transmitted signals can be integrated into the existing DBS subscribers' equipment, with only minor modifications, so that local television stations, rather than distant signals, can be viewed. Implementing Northpoint technology can solve several problems for the DBS operators and eliminates their biggest barrier to being truly competitive to cable television.

Weather is obviously and justifiably a major concern to DBS operators, and even though the tests were performed under rainy conditions, atmospheric conditions will continue to be an issue. DCE notes, however, that one solution to this dilemma is to use an automatic power level control that monitors the RSL of the weakest usable DBS satellite and dynamically adjusts the terrestrial transmitter's output power accordingly.

DCE further notes that there are several ways to minimize the effect of the exclusion zone. First, in the case of an exclusion zone of 1/4 mile, if the terrestrial station was on a 1000' communication tower, the exclusion zone in the horizontal direction would be less than 900', a distance which would typically still be on the property of the tower. Second, in many cases, the terrestrial transmitter may be remotely located on top of a hill or mountain with other broadcast towers that have no residential or commercial properties within the exclusion zone. In instances such as this, the transmitter output power can be increased to maximize coverage while still limiting the exclusion zone to unpopulated

areas. Another way to minimize the exclusion zone is to upgrade the antenna of any DBS subscribers in the exclusion zone by providing them with a non-offset antenna.

# **Experimental Testing Report**

## **1997 Kingsville Tests**

**Prepared by Comsearch for DCE, Inc.  
On Behalf of Northpoint Technology  
Submitted To: FCC Experimental Licensing Branch  
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