# EXHIBIT B

Sp 2603

Sprint Docket 1057

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## CERTIFICATION UNDER 37 C.F.R. 1.8

the strict that this Amendment is being deposited with the United States Postal Service as First Class Mail, postage prepaid, on April 16, 199 in an environment of Patents, Washington, D.C. 20231.

Jay B. Beatty-Intellectual Property Admi

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Joseph Michael Christie

Application No.:

08/568,551

Filed:

December 7, 1995

Title:

"METHOD, SYSTEM AND APPARATUS FOR

TELECOMMUNICATIONS CONTROL"

Examiner:

Blum, R.

**Art Unit:** 

2603

Hon. Assistant Commissioner for Patents Washington, D.C. 20231

Dear Sirs:

## **AMENDMENT**

Please enter this amendment to the above-referenced application. Applicants respectfully request consideration and allowance of the amended application. A Petition for Extension of Time a Correction of Drawings, Terminal Disclaimers, an Information Disclosure Statement, PTO Form 1449, and a Transmittal with authorization for the proper fees is also attached.

#### In the Claims:

Please amend claims 121, 139, 142, 147-149, and 153. Please cancel claims 150-152 without prejudice. Please add new claims 175-258.

121. (amended) A method for processing telecommunications signaling that comprises:

receiving a telecommunications signaling message from a telecommunications user into a signaling processor that is located externally to any switch;

processing the telecommunications signaling message in the signaling processor to select at least one characteristic for a communications path for the [a] telecommunications user;

generating a new telecommunications signaling message in the signaling processor that is based at least in part on the at least one selected characteristic; and

transmitting the new telecommunications signaling message to a [switch that] <u>network</u> <u>element on the communications path that has not received and did not generate the telecommunications signaling message received into the signaling processor.</u>

139. (amended) A method for processing telecommunications signaling that comprises:

receiving a telecommunications signaling message from a telecommunications user into a signaling processor that is not directly coupled to a switch matrix.

processing the telecommunications signaling message in the signaling processor to select a connection for a communications path for the [a] telecommunications user;

generating a new telecommunications signaling message in the signaling processor that is based at least in part on the selected connection; and

transmitting the new telecommunications signaling message to a [switch that] <u>network</u> <u>element on the communications path that</u> did not generate the telecommunications signaling message received into the signaling processor.

142. (amended) A method for processing telecommunications signaling that comprises:

receiving a telecommunications signaling message from a telecommunications user into a signaling processor that is not directly coupled to a switch matrix;

processing the telecommunications signaling message in the signaling processor to select a network element for a communications path for the [a] telecommunications user;

generating a new telecommunications signaling message in the signaling processor that is based at least in part on the selected network element; and

transmitting the new telecommunications signaling message to [a switch that] one of the network elements on the communications path that has not received and did not generate the telecommunications signaling message received into the signaling processor.

147. (amended) A method for processing telecommunications signaling that comprises:

receiving a telecommunications signaling message into a telecommunications network;

routing the telecommunications signaling message to a signaling processor that is located externally to any switch:

processing the telecommunications signaling message in the signaling processor to select at least one characteristic for a communications path for a telecommunications user;

generating a new telecommunications signaling message in the signaling processor that is based at least in part on at least one selected characteristic; and

transmitting the new telecommunications signaling message to a [switch that] <u>network</u> <u>element on the communications path that has not received and did not generate the telecommunications signaling message that was received into the telecommunications network and routed to the signaling processor.</u>

-220. The method of claim 200 further comprising receiving operational control information into the signaling processor and wherein processing the first telecommunications signaling message comprises processing based at least in part on the operational control information. --

-- 221. The method of claim 220 wherein receiving the operational control information comprises receiving an instruction not to select a particular network element. --

y-222. The method of claim 206 wherein generating the second telecommunications signaling message comprises generating a Signaling System #7 message. --

-- 223. The method of claim 206 wherein generating the second telecommunications signaling message comprises generating the second signaling message in a broadband format. --

-224. The method of claim 206 wherein selecting the characteristic comprises selecting a physical connection. --

-- 225. The method of claim 206 wherein selecting the characteristic comprises selecting a logical connection. --

73
-- 226. The method of claim 206 wherein selecting the characteristic comprises selecting a switch. --

-227. The method of claim 206 wherein selecting the characteristic comprises selecting a server. --

-- 228. The method of claim 206 wherein selecting the characteristic comprises selecting an enhanced platform. --

153. (amended) A telecommunications network that comprises:

a plurality of network elements wherein a plurality of the network elements are switches;

a signaling processor that communicates with the switches only through telecommunications signaling, wherein the signaling processor is operational to receive telecommunications signaling messages from outside of the telecommunications network, process the telecommunications signaling messages to select characteristics for communications paths for telecommunications network users, and generate and transmit new telecommunications signaling messages that are based at least in part on the selected characteristics;

a plurality of links between the signaling processor and the network elements that are operational to transmit the new signaling messages from the signaling processor to the network elements wherein the network elements do not receive and do not generate the signaling messages from outside of the telecommunications network;

a plurality of connections between the network elements wherein the network elements and connections are operational to form the communications paths for the telecommunications network users in response to the new telecommunications signaling messages.

-- 1.75. A telecommunications processor that is external to any telecommunications switch and that comprises:

a processor that is external to any telecommunications switch and that is operational to process a first telecommunications signaling message to produce information used to establish a communication path, wherein the processor is further operational to generate a second telecommunications signaling message based on the information, and wherein the second telecommunications signaling message is for transmission to a network element on the communications path that did not receive and that did not generate the first signaling message; and

a signaling interface that is external to any telecommunications switch, that is directly coupled to the processor, and that is operational to receive the first telecommunications signaling message and to transmit the second telecommunications signaling message to the network element on the communications path. --

- 176. A telecommunications processor that is external to any telecommunications switch and hat comprises:

a processor that is external to any telecommunications switch and that is operational to process a first telecommunications signaling message to select a connection used to establish a communication path, wherein the processor is further operational to generate a second telecommunications signaling message based on the selected connection, and wherein the second telecommunications signaling message is for transmission to a network element on the communications path that did not receive and that did not generate the first signaling message; and

a signaling interface that is external to any telecommunications switch, that is directly coupled to the processor, and that is operational to receive the first telecommunications signaling message and to transmit the second telecommunications signaling message to the network element on the communications path. --

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177. A telecommunications processor that is external to any telecommunications switch and that comprises:

a processor that is external to any telecommunications switch and that is operational to process a first telecommunications signaling message to select a network element used to establish a communication path, wherein the processor is further operational to generate a second telecommunications signaling message based on the selected connection, and wherein the second telecommunications signaling message is for transmission to a network element on the communications path that did not receive and that did not generate the first signaling message; and

a signaling interface that is external to any telecommunications switch, that is directly coupled to the processor, and that is operational to receive the first telecommunications signaling message and to transmit the second telecommunications signaling message to the network element on the communications path. --

-178. A method of processing telecommunications signaling to extend a first communications path that is between a first network element and a second network element, the method comprising:

receiving a first telecommunications signaling message into a telecommunications signaling processor, wherein the first telecommunications signaling message requests extension of the first communications path, and wherein the telecommunications signaling processor is located externally to the first network element and the second network element;

processing the first telecommunications signaling message in the telecommunications signaling processor to select a characteristic for extending the first communications path;

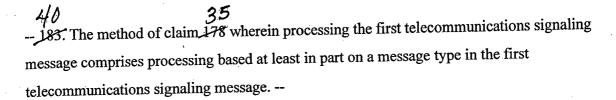
generating a second message in the telecommunications signaling processor wherein the second message identifies the selected characteristic; and

transmitting the second message from the telecommunications signaling processor to the second telecommunications network element wherein the second telecommunications network element did not generate and did not receive the first telecommunications signaling message. --

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-- 180. The method of claim 178 wherein receiving the first telecommunications signaling message into the signaling processor comprises receiving the first telecommunications signaling message in broadband format. --

38 - 181. The method of claim 178 wherein processing the first telecommunications signaling message comprises processing based at least in part on a point code in the first telecommunications signaling message. --

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--182. The method of claim-178 wherein processing the first telecommunications signaling message comprises processing based at least in part on a circuit identification code in the first telecommunications signaling message. --



41 -- 184. The method of claim 178 wherein processing the first telecommunications signaling message comprises processing based at least in part on a dialed number in the first telecommunications signaling message. --

42 35
-- 185. The method of claim 178 wherein processing the first telecommunications signaling message comprises processing based at least in part on set-up information in the first telecommunications signaling message. --

43 -- 186. The method of claim 178 further comprising receiving network status information into the signaling processor and wherein processing the first telecommunications signaling message comprises processing based at least in part on the network status information. --

-- 187. The method of claim 186 wherein receiving the network status information comprises receiving network loading information. --

-- 188. The method of claim 186 wherein receiving the network status information comprises receiving a connection status. --

-- 189. The method of claim 186 wherein receiving the network status information comprises receiving an error condition. --

-- 190. The method of claim 186 wherein receiving the network status information comprises receiving an alarm. --

#3
-191. The method of claim 186 wherein receiving the network status information comprises receiving a Signaling System #7 message. --

17. The method of claim 178 further comprising receiving operational control information into the signaling processor and wherein processing the first telecommunications signaling message comprises processing based at least in part on the operational control information. --

- 193. The method of claim 192 wherein receiving the operational control information comprises receiving an instruction not to select a particular network element. --

194. The method of claim 178 wherein generating the second telecommunications signaling message comprises generating a Signaling System #7 message. --

-- 195. The method of claim 178 wherein generating the second telecommunications signaling message comprises generating the second signaling message in a broadband format. --

53
-- 196. The method of claim 178 wherein selecting the characteristic comprises selecting a physical connection. --

54 3.5
-- 197. The method of claim 178 wherein selecting the characteristic comprises selecting a logical connection. --

55 35 -- 198. The method of claim 178 wherein selecting the characteristic comprises selecting a switch.

54 35 ... 199. The method of claim 178 wherein selecting the characteristic comprises selecting a server. --

-- 200. The method of claim 178 wherein selecting the characteristic comprises selecting an enhanced platform. --

58 33 -- 201. The method of claim 178 wherein selecting the characteristic comprises selecting a service node. --

202. The method of claim 478 wherein the second network element is a broadband switch. --

35
-204. The method of claim 178 wherein the second network element is an asynchronous transfer mode switch. --

42 35
--205. The method of claim 178 wherein the second network element is an asynchronous transfer mode multiplexer. --

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206. A method of processing telecommunications signaling to extend a first communications path that is between a telecommunications user and a network element, the method comprising:

receiving a first telecommunications signaling message into a telecommunications signaling processor, wherein the first telecommunications signaling message requests extension of the first communications path, and wherein the telecommunications signaling processor is located externally to the telecommunications user and the network element;

processing the first telecommunications signaling message in the telecommunications signaling processor to select a characteristic for extending the first communications path;

generating a second message in the telecommunications signaling processor wherein the second message identifies the selected characteristic; and

transmitting the second message from the telecommunications signaling processor to the network element wherein the network element did not generate and did not receive the first telecommunications signaling message. --

-207. The method of claim-206 wherein receiving the first telecommunications signaling message into the signaling processor comprises receiving a Signaling System #7 (SS7) Initial Address Message (IAM). --

-208. The method of claim 206 wherein receiving the first telecommunications signaling message into the signaling processor comprises receiving the first telecommunications signaling message in broadband format. --

-209. The method of claim 206 wherein processing the first telecommunications signaling message comprises processing based at least in part on a point code in the first telecommunications signaling message. --

-210. The method of claim 206 wherein processing the first telecommunications signaling message comprises processing based at least in part on a circuit identification code in the first telecommunications signaling message. --

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211. The method of claim 206 wherein processing the first telecommunications signaling message comprises processing based at least in part on a message type in the first telecommunications signaling message. --

69 -- 212. The method of claim 206 wherein processing the first telecommunications signaling message comprises processing based at least in part on a dialed number in the first telecommunications signaling message. --

-- 213. The method of claim 206 wherein processing the first telecommunications signaling message comprises processing based at least in part on set-up information in the first telecommunications signaling message. --

-- 214. The method of claim 206 further comprising receiving network status information into the signaling processor and wherein processing the first telecommunications signaling message comprises processing based at least in part on the network status information. --

215. The method of claim 214 wherein receiving the network status information comprises receiving network loading information. --

73 -- 216. The method of claim 214 wherein receiving the network status information comprises receiving a connection status. --

-217. The method of claim 214 wherein receiving the network status information comprises receiving an error condition. --

-- 218. The method of claim 214 wherein receiving the network status information comprises receiving an alarm. --

-- 219. The method of claim 214 wherein receiving the network status information comprises receiving a Signaling System #7 message. --

220. The method of claim 206 further comprising receiving operational control information into the signaling processor and wherein processing the first telecommunications signaling message comprises processing based at least in part on the operational control information. --

-- 221. The method of claim 220 wherein receiving the operational control information comprises receiving an instruction not to select a particular network element. --

222. The method of claim 206 wherein generating the second telecommunications signaling message comprises generating a Signaling System #7 message. --

-- 223. The method of claim 206 wherein generating the second telecommunications signaling message comprises generating the second signaling message in a broadband format. --

-224. The method of claim 206 wherein selecting the characteristic comprises selecting a physical connection. --

25. The method of claim 206 wherein selecting the characteristic comprises selecting a logical connection. --

-- 226. The method of claim 206 wherein selecting the characteristic comprises selecting a switch. --

-227. The method of claim 206 wherein selecting the characteristic comprises selecting a server. --

28. The method of claim 206 wherein selecting the characteristic comprises selecting an enhanced platform. --

25. The method of claim 200 wherein selecting the characteristic comprises selecting a service node. --

-330. The method of claim 200 wherein the second network element is a broadband switch. --

88 --231. The method of claim 206 wherein the second network element is a narrowband switch. --

-- 232. The method of claim 206 wherein the second network element is an asynchronous transfer mode switch. --

20 65
--233. The method of claim 206 wherein the second network element is an asynchronous transfer mode multiplexer. --

4. A method for processing telecommunications signaling that comprises:

receiving a telecommunications signaling message into a signaling processor that is not directly coupled to a switch matrix;

processing the telecommunications signaling message in the signaling processor to select a first characteristic for a first communications path and to select a second characteristic for a second communications path;

generating a first new telecommunications signaling message in the signaling processor that is based at least in part on the first selected characteristic and generating a second new telecommunications signaling message in the signaling processor that is based at least in part on the second selected characteristic; and

transmitting the first new telecommunications signaling message and the second new telecommunications signaling message, wherein the first new telecommunications signaling message is used to establish the first communications path and the second new telecommunications signaling message is used to establish the second communications path. --

92-235. The method of claim 234 wherein the first communications path and the second communications path are both used to form a single communications path. --

93 94 236. The method of claim 234 wherein receiving the telecommunications signaling message into the signaling processor comprises receiving a Signaling System #7 (SS7) Initial Address Message (IAM). --

- 237. The method of claim 234 wherein receiving the telecommunications signaling message into the signaling processor comprises receiving the telecommunications signaling message in broadband format. --

- 238. The method of claim-234 wherein processing the telecommunications signaling message comprises processing based at least in part on a point code in the telecommunications signaling message. --

-246. The method of claim 234 wherein processing the telecommunications signaling message comprises processing based at least in part on a message type in the telecommunications signaling message. --

-- 241. The method of claim 234 wherein processing the telecommunications signaling message comprises processing based at least in part on a dialed number in the first telecommunications signaling message. --

--242. The method of claim 234 wherein processing the telecommunications signaling message comprises processing based at least in part on set-up information in the telecommunications signaling message. --

-243. The method of claim 234 further comprising receiving network status information into the signaling processor and wherein processing the telecommunications signaling message comprises processing based at least in part on the network status information. --

101 100 -- 244. The method of claim 243 wherein receiving the network status information comprises receiving network loading information. --

--245. The method of claim 243 wherein receiving the network status information comprises receiving a connection status. --

-246. The method of claim 243 wherein receiving the network status information comprises receiving an error condition. --

104 100 -- 247. The method of claim 245 wherein receiving the network status information comprises receiving an alarm. --

105
--248. The method of claim 243 wherein receiving the network status information comprises receiving a Signaling System #7 message. --

106 -249. The method of claim 234 further comprising receiving operational control information into the signaling processor and wherein processing the telecommunications signaling message comprises processing based at least in part on the operational control information. --

107 100 -- 250. The method of claim 249 wherein receiving the operational control information comprises receiving an instruction not to select a particular network element. --

108 91
--251. The method of claim 234 wherein generating the new telecommunications signaling messages comprises generating at least one Signaling System #7 message. --

109 91
-252: The method of claim 234 wherein generating the new telecommunications signaling messages comprises generating at least one of the new signaling messages in a broadband format. --

110 91 -253. The method of claim-234 wherein selecting the characteristics comprises selecting at least one physical connection. --

111 91
-254. The method of claim 234 wherein selecting the characteristics comprises selecting at least one logical connection. --

112 91
--255. The method of claim 234 wherein selecting the characteristics comprises selecting at least one switch. --

-- 256. The method of claim-234 wherein selecting the characteristics comprises selecting at least one server. --

114 9/
--287. The method of claim 234 wherein selecting the characteristics comprises selecting at least one enhanced platform. --

115 91
--238. The method of claim 234 wherein selecting the characteristics comprises selecting at least one service node. --

#### Remarks

This Response includes the substance of the interviews related to this application between Russel Blum and Michael Setter on February 25-26, 1997 at the U.S. Patent Office. Claims 121-149 and 153-258 are pending. Claims 121, 139, 142, 147-149, and 153 have been amended. Claims 150-152 have canceled without prejudice. Claims 175-258 have been added and correspond in scope to previously presented claims.

The drawings stand objected to. A Correction of Drawings has been filed as a separate paper that includes red-line sketches. A copy of the paper is attached at the end of this amendment. On Figure 1, the descriptive terms "point" and "network element" have been added. On Figure 3, elements 328, 338, 340, 345, 360, 362, 364, 366, 370, and 375 are now descriptively labeled. Specifically, STPs 328, 338, 340, and 345 are now labeled "STP" instead using of the conventional diagonal line. Switches 325, 335, 360, 362, 364, 366, 370, and 375 are now boxes labeled "SWITCH" instead of using the conventional triangle symbol.

Claims 150-152 were rejected under section 112 as single means claims. These claims have been canceled without prejudice.

Claims 121-168, and claim 171 stand rejected under the doctrine of obviousness-type double patenting. A timely filed Terminal Disclaimer in compliance with 37 C.F.R. 1.321 (b) and (c) is enclosed to overcome this rejection.

## The rejections over D'Amato

Claims 121, 122, 139, 142, 147, 149-155, and 166 stand rejected under 35 U.S.C. 102(e) over D'Amato. Claims 121, 122, 142, 147, and 149 recite a method for processing telecommunications signaling. In these methods, a signaling processor receives and processes signaling. The signaling processor also generates and transmits new signaling based on the processing. Claims 121, 122, 142, 147, and 149 have been amended to recite that the new signaling is transmitted to a network element on the communications path that has not received the telecommunications signaling message received into the signaling processor. (Support for this amendment can be found throughout the specification, for example at page 10, lines 15-30; page 27, lines 18-26; page 34, lines 26-31; page 40, lines 24-28.)

In D'Amato, switch 130 corresponds to the "network element on the communications path", and the Initial Address Message (IAM) corresponds to the "telecommunications signaling message." In D'Amato, the IAM is sent to both Switch 130 and Signaling Director 151. (See Figure 2 and column 5 lines 15-29.) By receiving the IAM, switch 130 can process the call if no special services are required on the call. (See column 5, lines 31-55). This is in direct contrast with the invention. In the invention, the network element on the communications path does not receive the telecommunications signaling message received into the signaling processor. This advantageous, since the network element can now be much less sophisticated if so desired. Applicant submits that claims 121-122, 142, 147, and 149 are patentable under section 102(e) over D'Amato.

Claim 139 recite that the signaling processor processes the telecommunications signaling to select a "connection" for the communications path. In D'Amato, signaling director 151 does not select a connection, but selects an action for switch 130; either to: (a) proceed, (b) wait, or (c) deny. (See column 5, lines 30-55.) None of these responses is a connection. If response (a) is given, switch 130 must process the IAM to select the connection. Because it selects connections, the signaling processor of claim 139 is different than signaling director 151 of D'Amato. The signaling processor of claim 139 is advantageous in that it can avoid the need for this level of processing complexity in the switch. Applicant submits that claim 139 is patentable under section 102(e) over D'Amato.

Claims 150-152 were canceled without prejudice.

Claim 153 recites a network comprised of a signaling processor and various network elements. The signaling processor receives and processes signaling from outside of the network. The network elements do not receive this signaling. The signaling processor transmits new signaling to the network elements. This limitation has been discussed above. Claims 154, 155, and 166 are dependent on claim 153. Applicant submits that claim 153 is patentable under section 102(e) over D'Amato.

# The rejections over Gopal, Epley, and Rago

Claims 148-168 stand rejected under section 102 or section 103 over either Gopal Epley, or Rago as the primary reference. All three references teach a processor that is accessed by a

switch to obtain call processing information. In all three references, the switch sends a message to the processor, and the processor responds to the switch. Thus, the switch generates the signaling received by the processor. (See Gopal -- column 3, lines 25-27, and column 4, lines 51-53; Epley -- Figures 2 and 3, and column 4, lines 38-58; Rago -- column 1, lines 22-29, and column 8, lines 6-27).

Claims 149, 153-168, and 175-178 all require that the signaling processor receive and process signaling to generate new signaling. This new signaling must be transmitted to a network element that did not generate the signaling received into the signaling processor. This is in direct contrast to Gopal, Epley, or Rago where the switch does generate the signaling received into the signaling processor. This distinction represents a powerful advantage -- the switch does not need the complexity to know when to invoke an external processor. Applicant submits that claims 149, 153-168, and 175-177 are patentable under sections 102 and 103 over the cited art.

Claim 148 has been amended to recite a method where in-band signaling is received by the network element and converted to out-of band signaling without using the signaling to generate a query. The out-of-band signaling is then provided to the signaling processor in order to select a connection. (Support for this amendment can be found at page 13, line 20 to page 14, line 13.) In Gopal, Epley, and Rago, the switch processes the call and invokes the processor with a query. This is far different than the mere conversion of in-band signaling to out-of band signaling. Applicant submits that claims 148 is patentable under section 103 over the cited art.

#### The new claims

The new claims correspond in scope to previously presented claims. Applicant submits that the new claims are fully supported by the specification. New claims 175-233 include the limitation discussed above -- that the network element did not generate and did not receive the first telecommunications signaling message. New claims 234 and 235 correspond to pending claims 169 and 171. New dependent claims 179-205, 207-233, and 236-258 correspond to pending dependent claims as depicted in the following table.

New	Corresponding
Dependent	Pending Claim
Claim	
179	122
180	123
181	124
182	125
183	126
184	127
185	128
186	129
187	130
188	131
189	132
190	133
191	134
192	135
193	136
194	137
195	138
196	140
197	141
198	143
199	144
200	145
201	146
202	160
203	161
204	162
205	165
207	122
208	123
209	124
210	125
211	126
212	127
213	128
214	129
215	130
216	131
217	132
218	133
219	134
220	135
218 219	133 134

New	Corresponding
Dependent	Pending Claim
Claim	2 8 '
221	136
222	137
223	138
224	140
225	141
226	143
227	144
228	145
229	146
230	160
231	161
232	162
233	165
236	122
237	123
238	124
239	125
240	126
241	127
242	128
243	129
244	130
245	131
246	132
247	133
248	134
249	135
250	136
251	137
252	138
253	140
254	141
255	143
256	144
257	145
258	146

As to the admitted prior art cited by the Examiner in points 14-16 of the recent Office Action, Applicant agrees that these types of networks and network elements were known, but

Applicant submits that it would not be obvious to include these networks and network elements in the context of the inventive combinations discussed above. Applicant also submits that changes not discussed above that were made to claims 121, 139, 142, and 147-149 were made to clarify these claims, and were not made in response to a prior art rejection. Applicant submits that claims 121-149 and 153-258 are patentable and requests allowance of these claims. Applicant is prepared to cooperate with the Examiner in order to bring this case to a conclusion. Applicant respectfully requests that the Examiner telephone the undersigned with any comments or suggestions that would foster such cooperation.

Respectfully submitted,

<u>4-16-97</u> Date

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