



1315 East-West Highway / Room 8813

February 11, 2008

Mr. John R. Schmidt
President, NCAD Corporation
P.O. Box 18010
Erlanger, KY 41018

Dear Mr. Schmidt:

During the period from December 1, 1996 to September 9, 2006; the NCAD Corporation operated the Continuously Operating Reference Station (CORS) known as ERLA.

In cooperation with the NCAD Corporation, NOAA's National Geodetic Survey (NGS) downloaded GPS data from ERLA on a regular basis and made these data publicly available over the Internet via anonymous file transfer protocol (FTP).

In addition, NGS introduced in November 1998 a Web-based utility, called the "User-Friendly CORS" (UFCORS). This utility enables its users to access GPS data from ERLA and other stations in the National CORS network.

In addition, NGS introduced in March 2001 a Web-based utility, called the "Online Positioning User Service" (OPUS). This utility enables its users to process their GPS data with GPS data from ERLA and other stations in the National CORS network so as to obtain accurate positional coordinates for the location where these users collected their data.

NGS records reveal that UFCORS users downloaded GPS data, collected at ERLA, a total of 1,020 times in 2005 and a total of 1,138 times in 2006. I have been unable to obtain corresponding counts for the other years. However, based on the counts for these two years, it appears that UFCORS users have downloaded ERLA data about 10% more often than the average number of UFCORS downloads for other stations in the National CORS network. Hence, using the average number of UFCORS download per CORS, I estimate that UFCORS users downloaded about 7,100 data packages from ERLA between December 1996 and September 2006, as summarized in the included table.

To estimate the number of ERLA data packages which CORS users downloaded via anonymous FTP, I used the approximation that users download CORS data about six times more often by anonymous FTP than by UFCORS. Hence, I estimate that CORS users downloaded 42,600 (= 6 times 7,100) data packages from ERLA between December 1996 and September 2006.



To estimate the number of ERLA data packages which OPUS users employed, I used the approximation that the number of UFCORS downloads for ERLA in 2005 and 2006 was about 0.15% of the total number of UFCORS downloads of all CORS data in these two years. Because each OPUS solution involves three different CORS, it follows that 0.45% (= 3 times 0.15%) of all OPUS solutions would have involved ERLA. Now, OPUS has performed about 600,000 solutions. Hence, about 2,700 OPUS solutions (= 0.45% times 600,000) have involved ERLA.

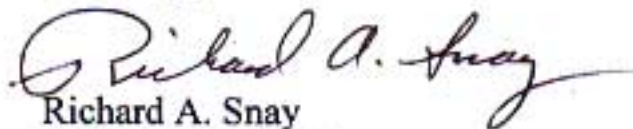
In summary, I estimate that GPS data, collected at ERLA, have been downloaded about **7,100** times via UFCORS and about **42,600** times via anonymous FTP and about **2,700** times by OPUS users during the time period from December 1, 1996 to September 9, 2006.

rounding down:

john's tabulation/summary:

7,000	UFCORS
42,000	CORS FTP
2,500	OPUS
51,500	total
* \$100	@
=	\$515,000 value of direct use.

Sincerely,



Richard A. Snay
 Chief, Spatial Reference System Division
 Tel: 301-713-3191 x 103
 Fax: 301-713-4324
 Email: Richard.Snay@noaa.gov

Table. Number of downloads of ERLA data via UFCORS.

Year	Number of UFCORS downloads	Number of Operational CORS	Avg. number of UFCORS downloads per station	Number of UFCORS downloads for ERLA	Comment
1996	0	70	0	0	actual
1997	0	100	0	0	actual
1998	0	130	0	0	estimated
1999	20,000	165	121	133	estimated
2000	65,623	198	331	364	estimated
2001	200,816	229	876	963	estimated
2002	336,461	323	1,042	1,146	estimated
2003	480,772	421	1,142	1,256	estimated
2004	477,422	496	962	1,058	estimated
2005	640,980	667	960	1,020	actual
2006	818,743	828	989	1,138	actual
Total				7,078	estimated

* actual cost of field work to achieve comparable data is more accurately \$200, making the direct value of **erla** beyond \$1M; indirect: infinitely continues without end...

examples of indirect value:
 facilitating development and
 positional accuracy of utility mapping