

DESCRIPTION OF BOULDER, COLORADO TRIAL

1. General

U S WEST Communications, Inc. ("USWC") is submitting this application, with modifications, to **renew the experimental license currently in place for Boulder, Colorado, for an additional 18 months.** The initial authorization request discussed a wireless access phase that has not yet taken place; the grant of this renewal request will allow USWC to move into the second phase outlined in the original request. The renewal will support a system test of CDMA equipment using IS-95 air interface and a user oriented test with up to 500 non-paying participants. The objectives of the renewal are to verify the accuracy of CDMA coverage models, to address technical issues, and to obtain consumer opinions on quality of service and wireline-like features.

Not market study
CDMA remains a developmental system, as there does not exist today an operating CDMA network at 1.9 GHz providing large scale service. For this reason, USWC is motivated to evaluate this technology on an operating network scale larger than the industry demonstrations in which it has participated to date.

The planned trial is described in more detail below.

2. Public Interest

USWC wants to understand the underlying market needs that can be met with low power radio technologies and the technical issues associated with meeting those needs in a cost-effective and efficient manner. Technical and consumer research will focus on the use of new radio technologies to better serve a wide range of consumers.

The continuation of this experimental program should lead to the more rapid and economic delivery of PCS to a wide variety of consumers on a competitive basis and will thus serve the public interest.

3. Schedule and Scope

Under the renewed grant, planned activities will be divided into three stages. The first stage will consist of a system test where USWC and manufacturer engineers install, test, turn up, and troubleshoot CDMA infrastructure hardware and software. The next stage will consist of up to 500 "friendly" users being served by the trial PCS network. The goal is to offer a range of wireless communications services and to learn from the responses of the "friendly" users. Stage three will resolve problems arising in the "friendly" user stage and could potentially involve repeating portions of the initial technical stage.

4. Spectrum and Power

Under the renewed license, testing will be limited to 1885 MHz to 1990 MHz and 1965 MHz to 1970 MHz. No other radio frequencies are requested for this renewal. The requested power is 100W erp per carrier per antenna which is the same as for the current license. Testing will be coordinated with existing users to avoid any harmful interference to operational systems during the trial. As an extensive user of point-to-point microwave systems, USWC engineers are experienced in the analysis of microwave interference potential and frequency coordination procedures.

5. Cell Sites

Under the renewal, USWC's goal is to provide 90% outdoor, multiple cell coverage to 90% of the Boulder metropolitan population. Using cell planning application tools and the results from prior industry CDMA coverage demonstrations in Boulder, USWC is planning multiple high tier cell sites. The antennas will be 90 degree azimuth beamwidth by 7 degree to 15 degree vertical beamwidth, for a peak gain of about 15 dBd. Experimental antennas with more sectors, called SMART antennas, will be used in some sites if available.

6. Network and Features

For the continued trial, the PCS network will operate much like cellular. A handset will communicate with one or more base stations via the CDMA IS-95 air interface. The base station will control soft handoff within its sectors. The base stations will be linked to a single base station controller ("BSC"). The BSC will control soft and hard handoff between its sectors.

The mobile switching center will provide the connection to the public switched telephone network. Some system service applications will be available to be included in the trial by April, 1996. USWC's goal is to offer features similar to those currently available with local wireline service over the trial PCS network. Exact features to be offered will depend on availability from the manufacturer.

6. Handsets

For this trial, CDMA handsets will be used. Output power will be 200 mW (23 dBm) and the handset antenna gain will be 0 dBd. Features such as displays and function buttons will depend on availability from the manufacturer.