MCI Communications Corporation
1801 Pennsylvania Avenue, NW
Washington, DC 20006
202 887 2375
Fax 202 887 2676

Kimberly M. Kirby
Senior Manager
FCC Advocacy
Law and Public Policy

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

February 10, 1998

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street, NW Room 222
Washington, DC 20554

Re: Ex Parte Presentation in CC Docket 96-45

Dear Ms. Salas:

On Monday, February 9, 1998, Mary Sisak (MCI), Chris Frentrup (MCI), Michael Pelcovits (MCI), Mark Bryant, representing MCI, Karen Reidy (MCI), Jerry Epstein, from the law firm of Jenner & Block, representing MCI, Jeff Ryen, from the law firm of Jenner & Block, representing MCI, Jonathan Marshalian (MCI), Joel Lubin (AT&T), Al Lewis (AT&T), Rich Clarke (AT&T), and the undersigned, met with Jim Casserly, Senior Legal Advisor to Commissioner Ness, Kevin Martin, Legal Advisor to Commissioner Furchtgott-Roth, and Kyle Dixon, Legal Advisor to Commissioner Powell. The purpose of the meeting was to discuss issues related to the different cost proxy models as filed in the above-captioned proceeding. The attached document briefly outlines the topics discussed.

Two copies of this Notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206(a)(2) of the Commission's rules.

Sincerely,

Kimberly M. Kirby

Kimberly M. Kirby

Attachment

cc: Jim Casserly, Office of Commr. Ness
Kyle Dixon, Office of Commr. Powell
Kevin Martin, Office of Commr. Furchtgott-Roth
Paul Gallant, Office of Commissioner Tristani
Tom Power, Office of Chairman Kennard
Tim Peterson (USB)
Lisa Gelb (USB)
Bob Loube (USB)

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HAI Model v 5.0

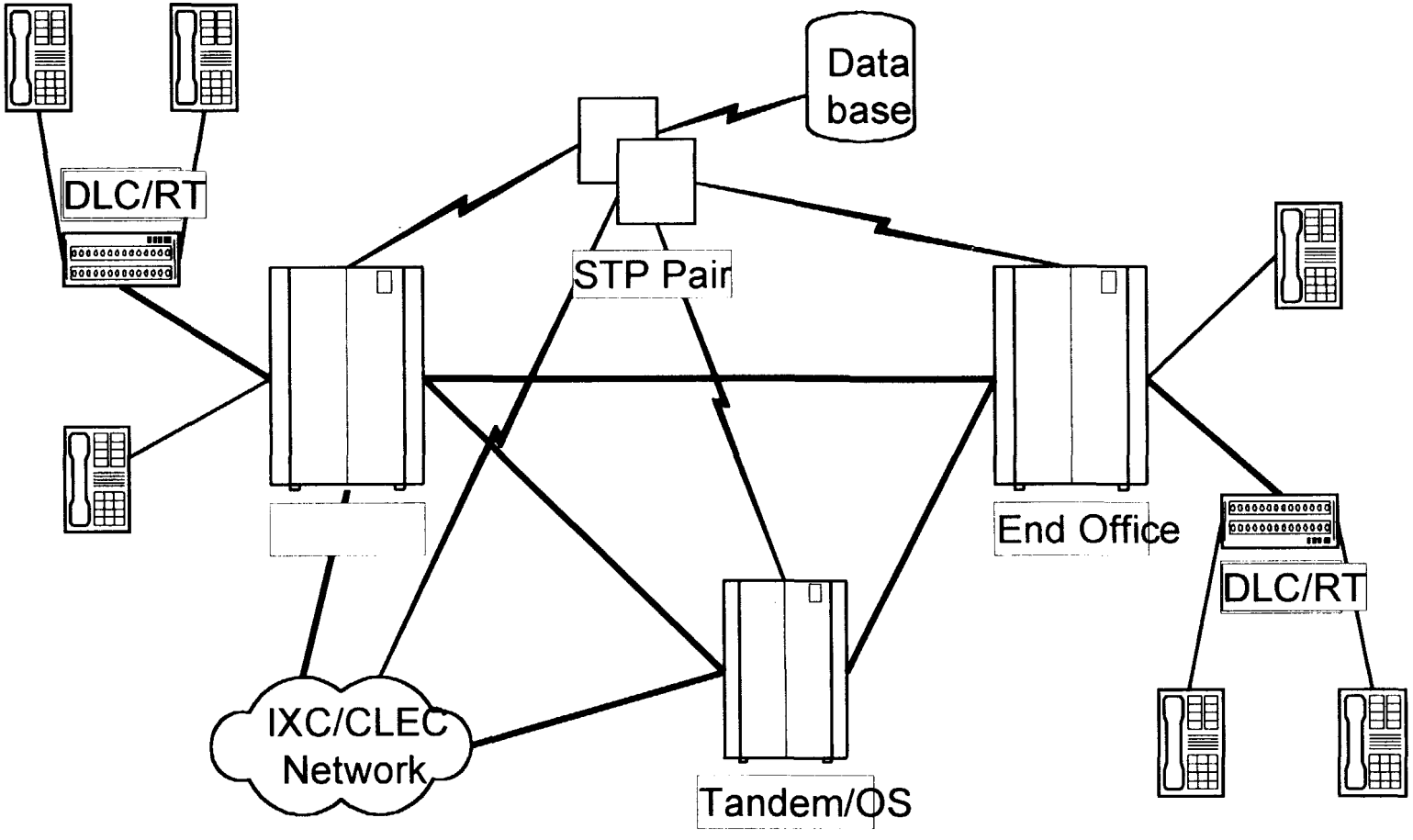
February 9, 1998

Michael Pelcovits, MCI
Rich Clarke, AT&T
Mark Bryant, MCI
Chris Frentrup, MCI

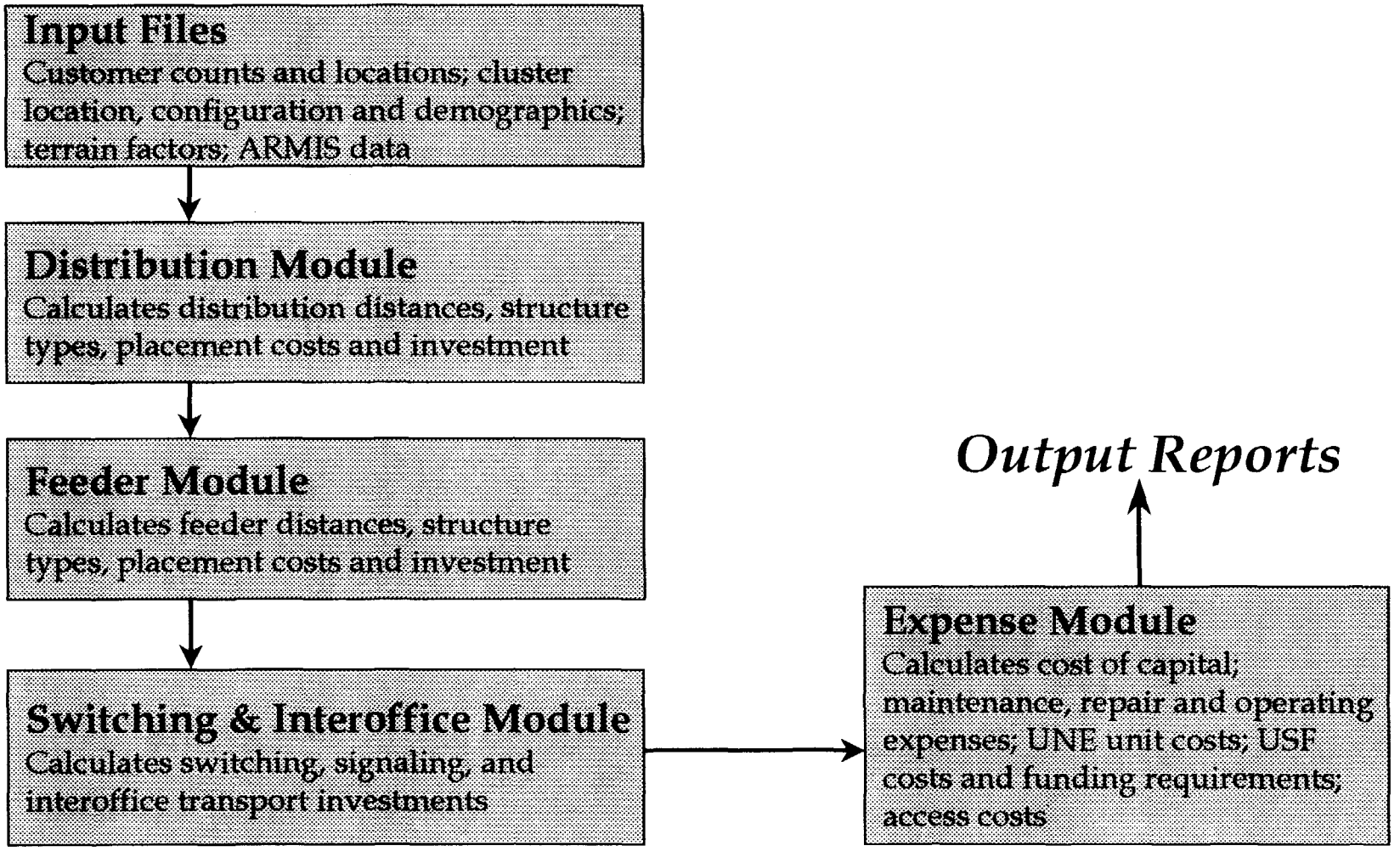
Purpose of the HAI Model

- Estimate forward-looking economic cost of basic local exchange service
- Estimate forward-looking economic cost of unbundled network element
- Size Universal Service support funding
- Cost of carrier interconnection and access

All components of the local network are modeled



HAI Model Flowchart



HM 5.0 Process Stages

Input Data Development

- Counting and Locating Customers
  - PNR National Access Line Model (NALM)
  - Locating customers
  - Geocoding actual customer locations
  - Location gross-up process
- Clustering process
  - Grouping customers that can be served in a single distribution area into distribution areas

HM 5.0 Process Stages

Local Network Engineering

- Loop plant
  - NIDs, drops and terminals
  - Placing copper distribution cables (analog or digital T1) to serve located customer clusters
  - Determining whether to use copper or fiber feeder
  - Directing feeder and subfeeder routes
  - Choice of OSP placement type
- Switching
  - Host/remote/standalone or blend
  - Use of switch-specific traffic engineering

HM 5.0 Process Stages

- Interoffice transport
  - Redundant SONET fiber ring construction
  - Sized based on ring-specific traffic characteristics
  - Tandem switches
- Signaling
  - STPs/SCPs/signaling links
- Expenses
  - Return to capital, depreciation, taxes
  - Operating and maintenance
  - Corporate overheads

Locating Customers

- HAI Model determines customer location by geocoding actual latitude and longitude
  - accurate to precise street address location
  - covers >70% of all customer locations in US
  - locations that cannot be geocoded are placed on census block boundaries

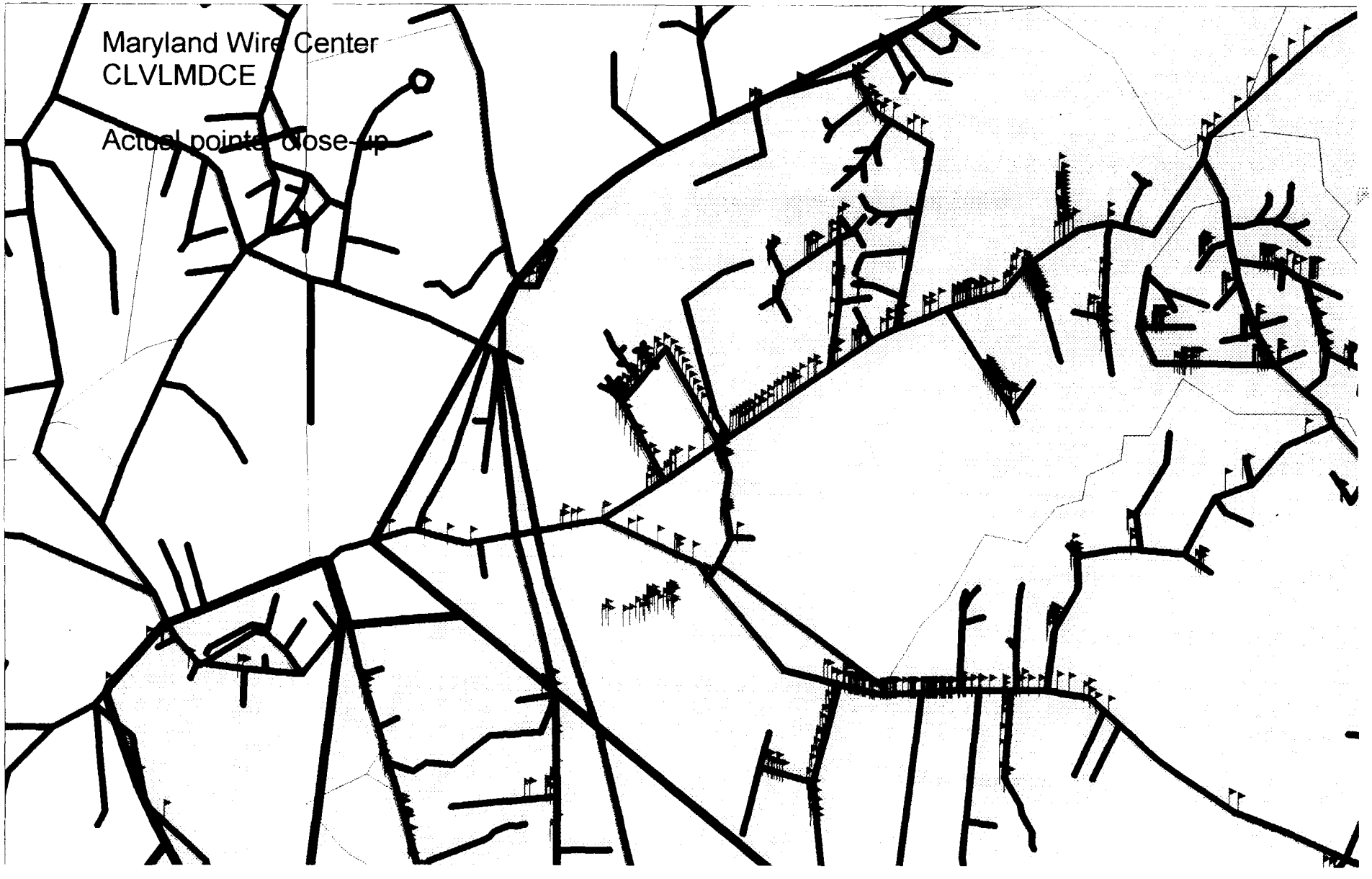
Locating Customers

Issue: The location of customers within census blocks in rural areas is important in estimating network costs

- BCPM assumes customers in rural census blocks are uniformly dispersed along roads
- The HAI Model determines customer location by geocoding actual latitude and longitude

Locating customers - BCPM

- The BCPM "roads and grids" assumption is flawed in both concept and application
  - Many roads do not have customers
  - Some customers are not (apparently) located on roads
  - Dispersion of customers along roads varies widely


Maryland Wire Center
CLVLMDCE
Actual points close-up

Customer Location

- Scorecard:
  - BCPM does not accurately locate a single customer
  - HAI Model determines precise location for >70% of all customers
    - where geocoding isn't sufficiently accurate, its surrogate method is at least as good as BCPM's

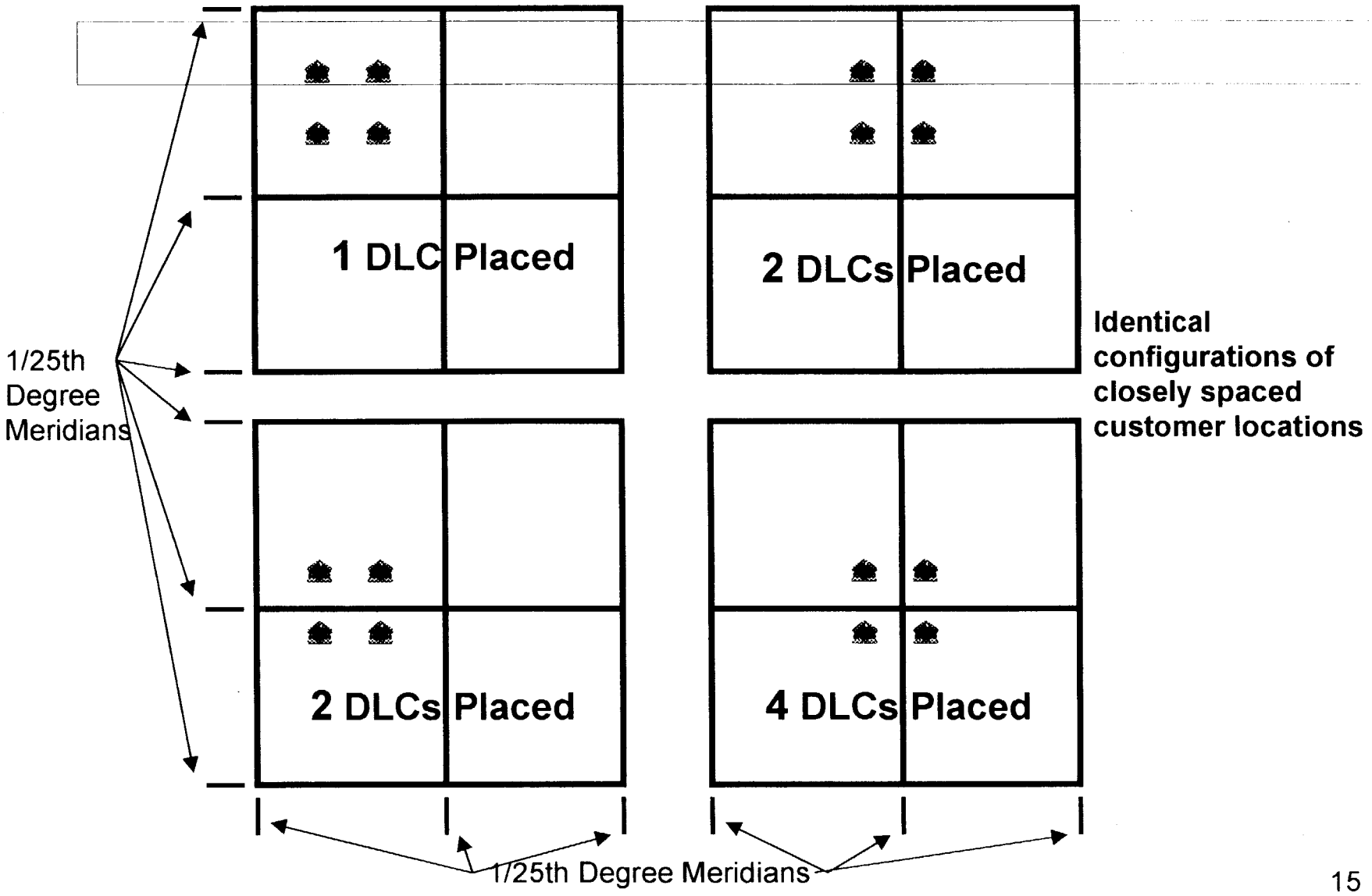
Clustering Customers

- Issue: Customer locations must be grouped into units that can be efficiently served
  - Based on proximity of customer locations
  - Subject to engineering constraints
    - No analog copper segment > 18kft
    - < 1800 lines served from a single remote terminal

Clustering Customers

- BCPM uses "grids" to determine clusters
  - Grids based on 1/25° of latitude and longitude
  - Road segments where population is assumed to be located determines grids used as telephone serving areas

Random Effects of BCPM3 "Unguided Cookie Cutter"

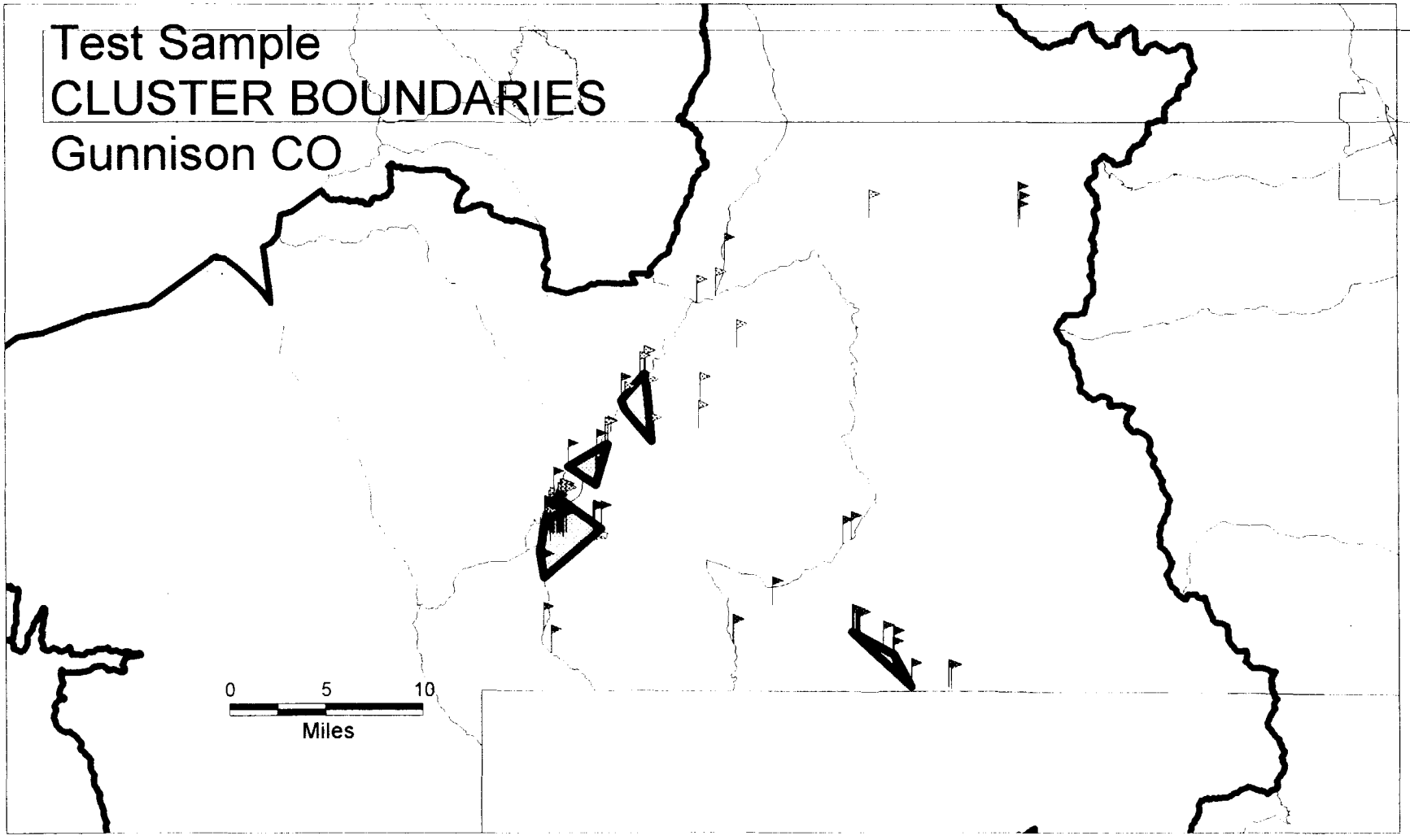


Clustering Customers

- HCPM also uses “grids” to determine clusters
  - Grids sized to approximate average CB sizes
  - Customers assumed to be uniformly distributed in the single grid cell that contains the CB’s “interior point”

Clustering Customers

- HAI Model groups customers without respect to artificial boundaries
- Determines both
  - Clusters of customers served through a street grid network
  - Outlier customer locations dispersed along roads

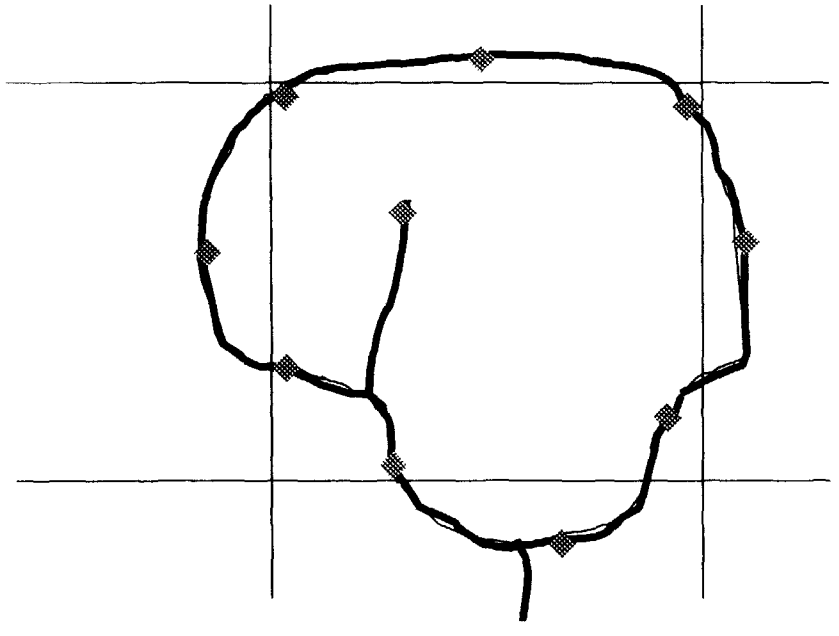

Test Sample
CLUSTER BOUNDARIES
Gunnison CO
0
5
10
Miles

Clustering Customers

- BCPM and HCPM arbitrarily locate customers within an "unguided cookie cutter"
- HAI Model determines clusters based on actual customer locations

In BCPM:

This...



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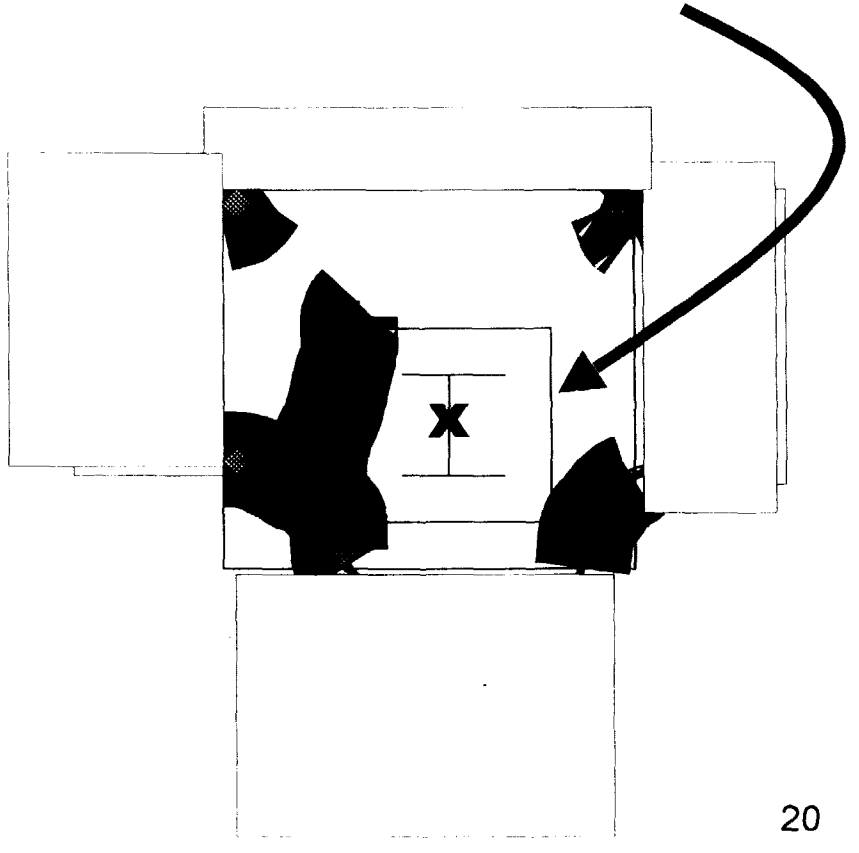
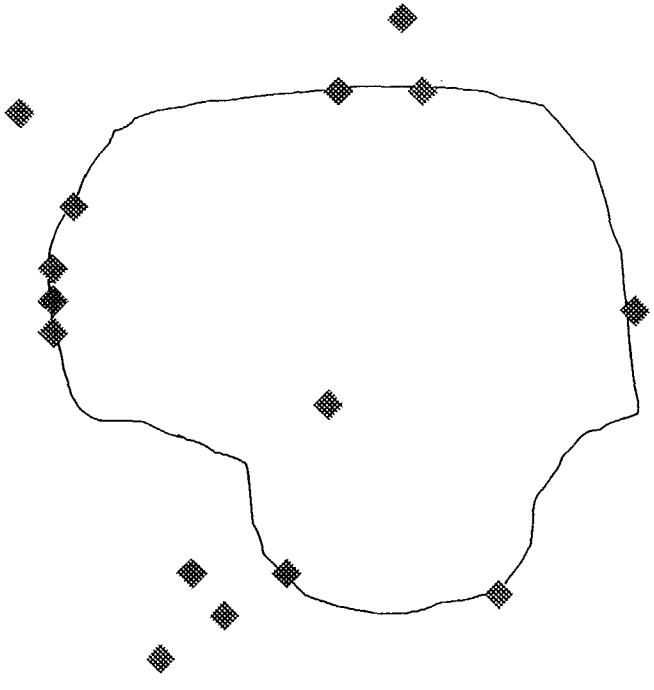


In the HAI Model:

This...



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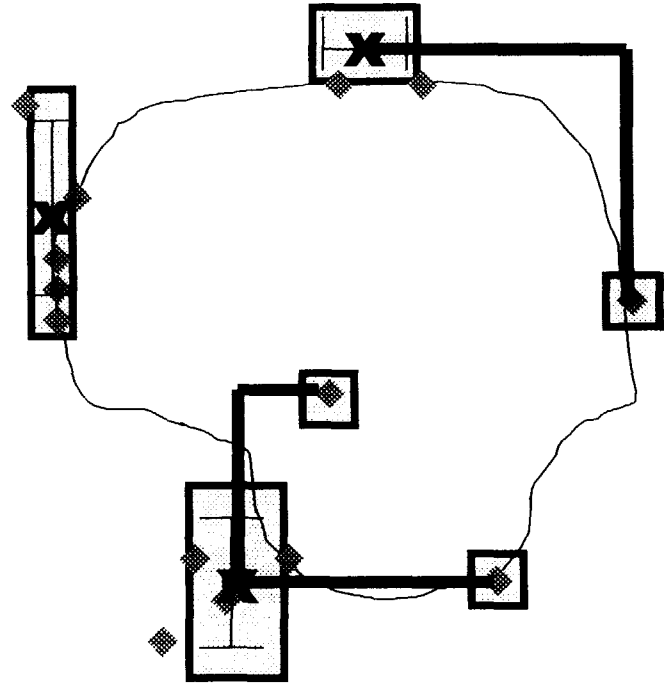
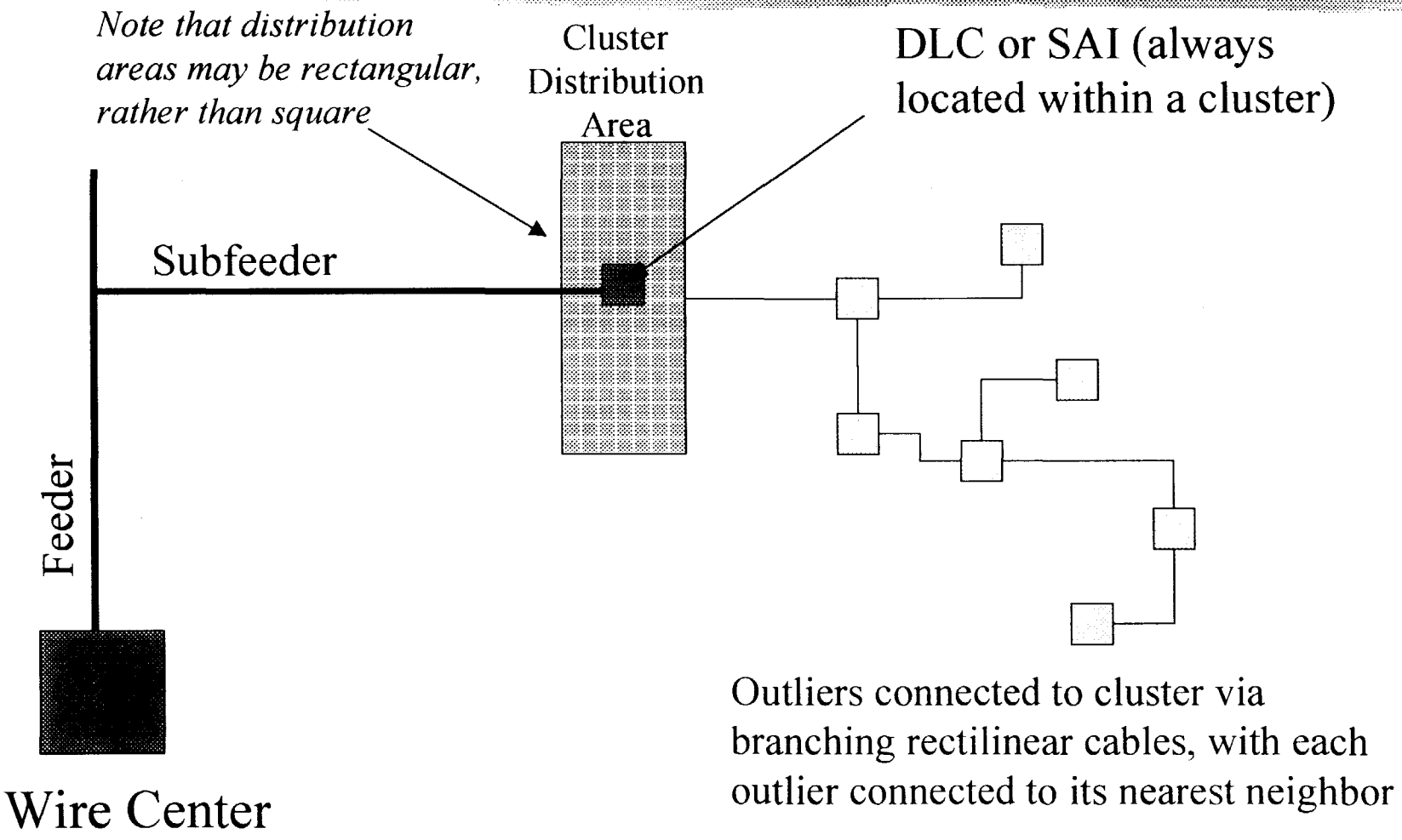


Distribution Engineering

- The HAI 5.0 Distribution Module takes as input the main and outlier clusters within each wire center's service area
  - Location, area, aspect ratio and line counts of cluster
  - For outlier clusters, identity of nearest other cluster
- NIDs, drops, terminals and splices engineered
- Distribution cables
  - For main clusters, copper backbone and branch cables are engineered to “cover” the cluster
  - Analog copper or digital T1 copper cables link outlier to nearest main cluster

Feeder Engineering

- Feeder cables link SAIs/DLC RTs in each main cluster to the serving wire center
  - Digital fiber if total analog copper distance would exceed 18 kft., or if
  - Fiber is more economical than copper on the route -- based on life-cycle cost analysis
- Feeder routes may point N-S-E-W, or be steered
- Structure used for OSP is selected based on:
  - Engineering/zoning limitations of density zone
  - Life-cycle cost comparison based on local terrain and economic conditions

Engineering Schematic