

I WASN'T THERE; IT WASN'T ME CHALLENGING THE USE OF HISTORICAL CELL SITE LOCATION TESTIMONY



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The Southern Public Defender Training Center is now...

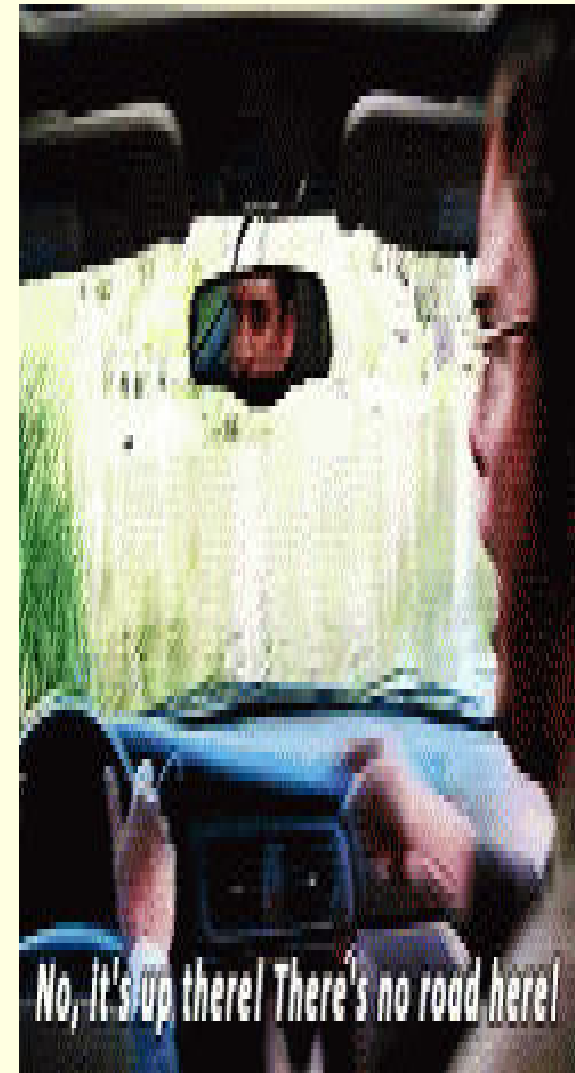


GIDEON'S PROMISE

Strengthening Public Defenders. Transforming Public Defense.

HAS THIS EVER HAPPENED TO YOU ?

- You put your destination into your Cell phone. Google maps tells you to start walking north towards Peachtree Street. As you are walking north it appears you are getting further away from your intended destination. You turn around walking south, Google starts telling you to turn left and walk east. You turn left going east, after three blocks you realize your walking in the wrong direction again. Why does this happen ?



Quiz:

- Can an FBI Agent testify where a person was located using Historical Cell Site Analysis ?



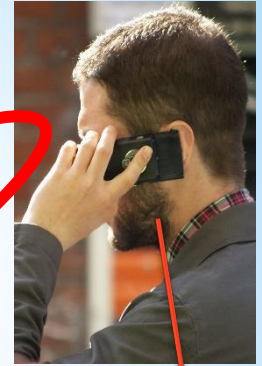
Quiz:

- Can an FBI Agent testify where a Cell Phone was located using Historical Cell Site Analysis ?



- Cell Phones Constantly Monitoring Cell Towers to Determine which has the Strongest Signal
 - Occurs both when the Phone is Being Used and When it is Not
 - This Monitoring is NOT Recorded or Preserved
- Cell Phone Transmissions Carried over Radio Waves issued by the FCC
 - Phone Companies split Radio Waves to increase the Capacity of their ability to Provide Service

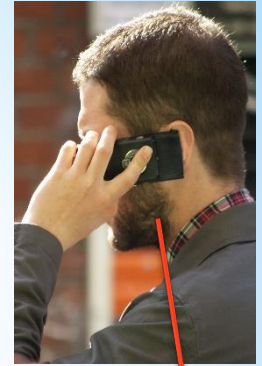
*How Cell Phone Towers Work



50 Miles



*How Cell Phone Towers Work



50 Miles



*How Cell Phone Towers Work

Quiz:

- Does a Person have to be using their phone for it to connect with a Cell Tower ?
 - Any Communication with the Cell Phone will cause it to Connect with a Tower



WHAT IS COMMUNICATION ?

- Email ?
- Telephone Call ?
- Text Message ?

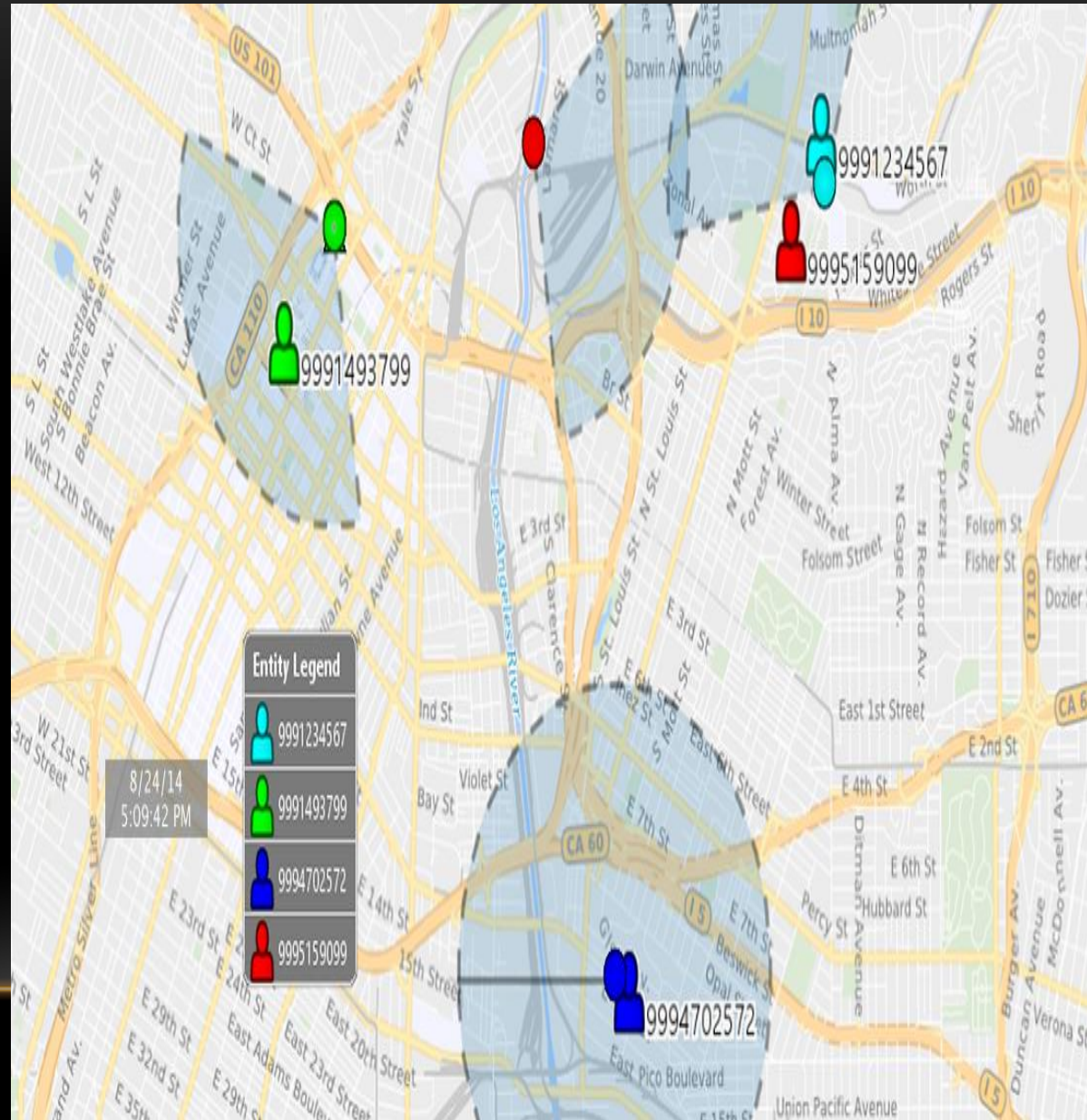


IS POSTING YOUR CAT PIC TO THE INTERNET COMMUNICATION FOR PURPOSES OF TOWER CONNECTION ?



WHAT IS HISTORICAL CELL SITE DATA ?

- The method by which the location of a cell phone is hypothesized based upon which cell tower connected to the phone at a particular time



○ Cell Phone Towers Include Three Antennae Designed to Cover 360 Degrees

- Each Antenna's coverage area is Labeled as a Sector



* How State's witness wants you to believe Cell Towers Work

- Cell Phone Towers Include Three Antennae Designed to Cover 360 Degrees
 - Each Antennas coverage area is Labeled as a Sector
 - A Distributor monitors activity on each Cell Tower to Determine the Use and Available Capacity for Each Antenna



* **How Cell Towers Actually Work**

CELL SITES COME IN ALL SHAPES AND SIZES



ATTACKING “EXPERT” TESTIMONY

■ Four Level Attack Against HCSLI Testimony

1. Challenge Admissibility

- *Frye v. US, 293 F. 1014*
- *Daubert*

2. Limit Scope

- Prevent State’s witness from testifying about location of Cell Phone

3. Challenge the Expertise/Bias of the Government’s Witness

4. Limit Effectiveness/Persuasiveness

- Prevent Jurors from Surrendering their Judgement for Claims of State’s Witness

LANGUAGE MATTERS



- Who is Testifying for the Government regarding Cell Site Analysis



FIRST LINE OF ATTACK

➤ Block that Shit !!!!



“BLOCK” THE HCSL TESTIMONY

- Evidence Blocking
 - File *Frye* or *Daubert* Motion to prevent Government from Presenting Testimony Regarding HCSL Analysis



FRYE CHALLENGE

- Standard:

- New Scientific Method admissible if “Generally Accepted in the Relevant Scientific Community”



DAUBERT

- Trial judge is “gate-keeper”
- Relevance under FRE 702 “liberal”
- Scientific testimony **MUST** be reliable
- Based upon “scientific knowledge”
 - Blackmun:
 - “scientific” implies a grounding the methods and procedures of science



DAUBERT

Five Factors to Consider under Daubert:

- (1) Empirical testing
- (2) Peer Review and Publication
- (3) Error Rate
- (4) Maintenance of Standards
- (5) General Acceptance

KUMHO TIRE

- *Daubert's* interpretation of Rule 702 applies equally to proposed expert testimony based on technical or other specialized knowledge
- *Daubert* factors flexible
- The “list of specific factors neither applies to all experts or in every case”

Kumho Tire Co. v. Carmichael, 526 U.S. 137

BLOCK CELL SITE ANALYSIS TESTIMONY

- ❉ Information Kept by Cell Phone Companies to Determine Tower Usage NOT Cell Phone Location
 - Information to Track Tower usage statistics
- ❉ Maps Created for Trial are made by the FBI Witness NOT Cell Phone Company



WHAT'S THE RELEVANT COMMUNITY ?

- Who Does the State Call to Testify ?



- Who Should be Called ?

IS TESTIMONY RELIABLE ?

🎬 HCSLI is the Most Accurate Way to Determine the Location of a Cell Phone?

○ Right ?



WHAT ARE THE THREE METHODS TO TRY AND APPROXIMATE THE LOCATION OF A CELL PHONE AT A PARTICULAR POINT IN TIME?

- ⦿ GPS Location

- ⦿ Triangulation

- ⦿ Historical Cell Site Analysis

WHICH METHOD OF APPROXIMATING THE LOCATION OF A CELL PHONE AT A PARTICULAR POINT IN TIME IS THE LEAST ACCURATE ?

⦿ GPS Location

⦿ Triangulation

⦿ Historical Cell Site Analysis

WHICH METHOD OF APPROXIMATING THE LOCATION OF A CELL PHONE AT A PARTICULAR POINT IN TIME IS THE LEAST ACCURATE ?

❁ Historical Cell Site Analysis

WHICH METHOD IS MOST FREQUENTLY USED BY PROSECUTORS TO APPROXIMATE THE LOCATION OF A CELL PHONE AT A PARTICULAR POINT IN TIME?

- ⊗ GPS Location
- ⊗ Triangulation
- ⊗ Historical Cell Site Analysis

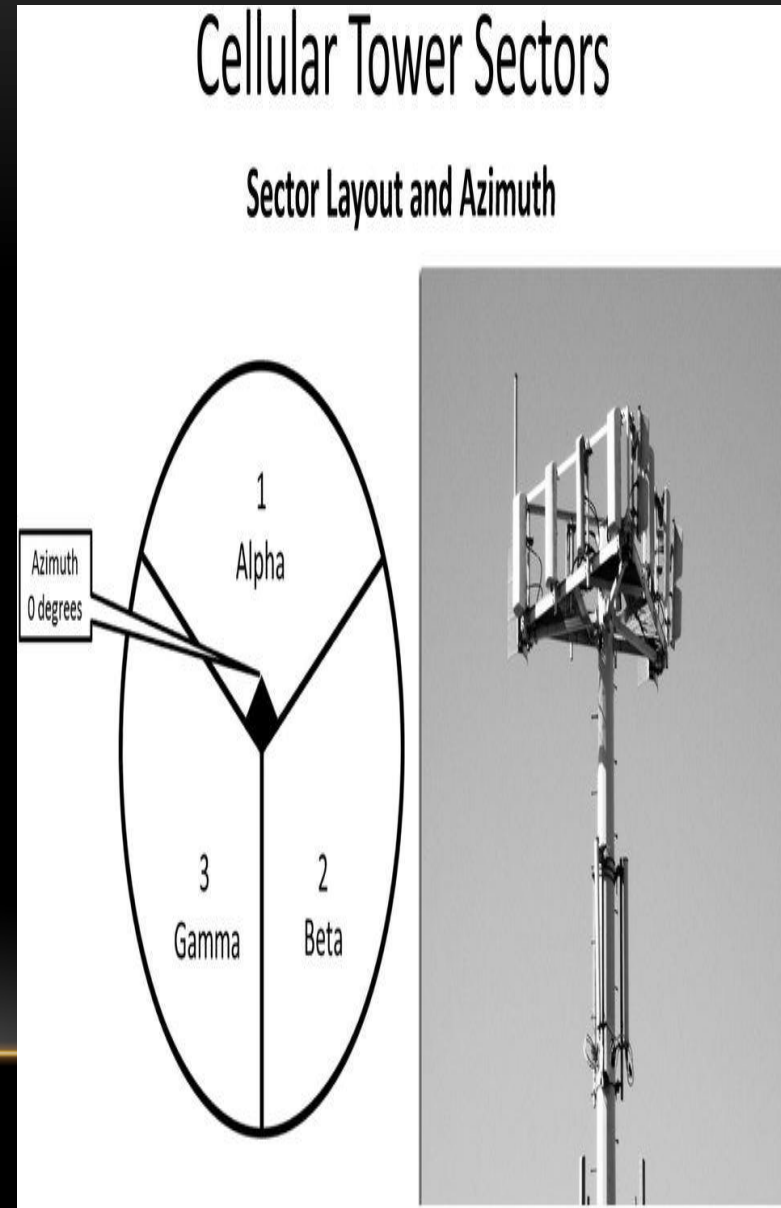
WHICH METHOD IS MOST FREQUENTLY USED BY PROSECUTORS TO APPROXIMATE THE LOCATION OF A CELL PHONE AT A PARTICULAR TIME?

⊙ Historical Cell Site Analysis

- GPS Devices are Accurate to within about 50 Feet
- Using information from Multiple Cell Towers can pinpoint cell phone with accuracy of within 50 meters
- Cell Site Location Information as much as 12,500 times LESS ACCURATE

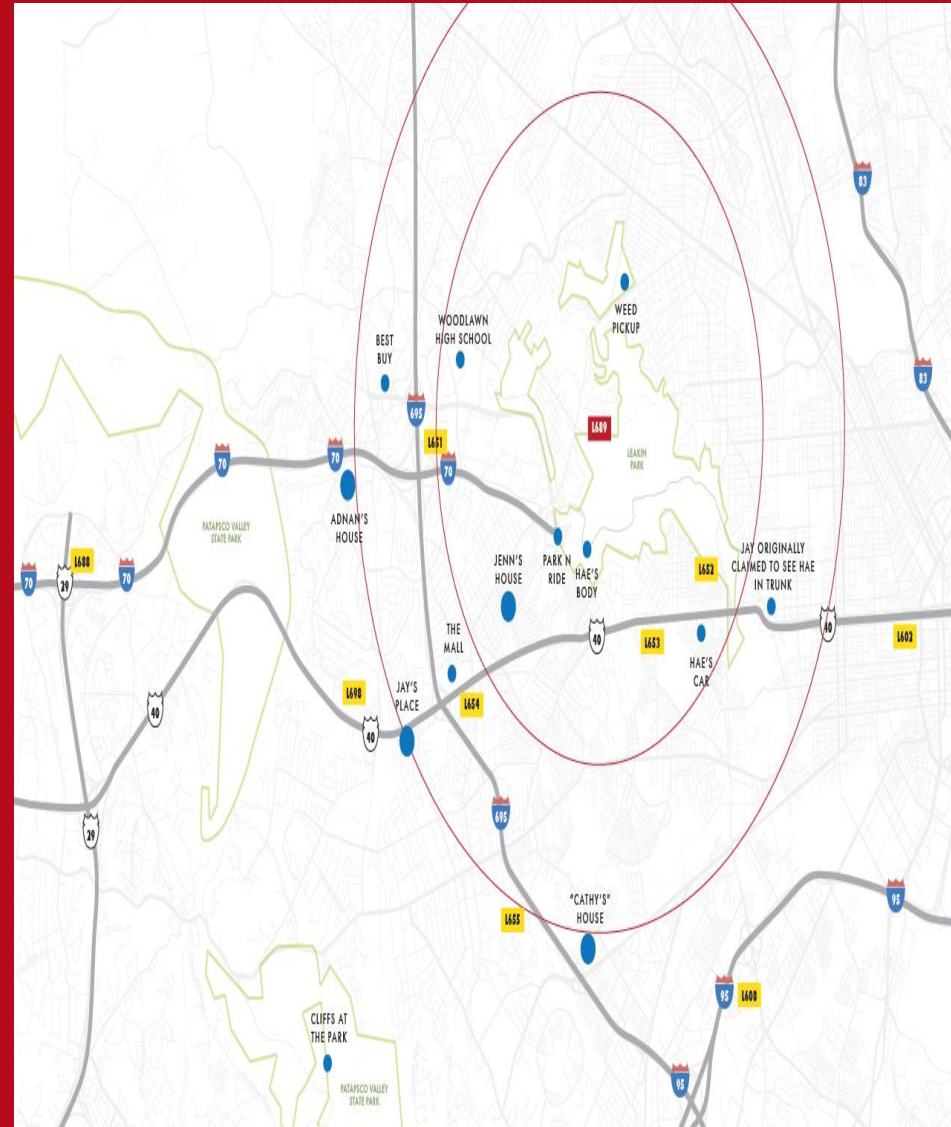
FALSE ASSUMPTIONS ON WHICH HCSLI PREMISED

- Tower Coverage areas are Cone Shaped and Equal
- The coverage range (radius) of a Cell Phone Tower is Six Miles
- Two Phones in the same Coverage Sector will connect to the same Tower



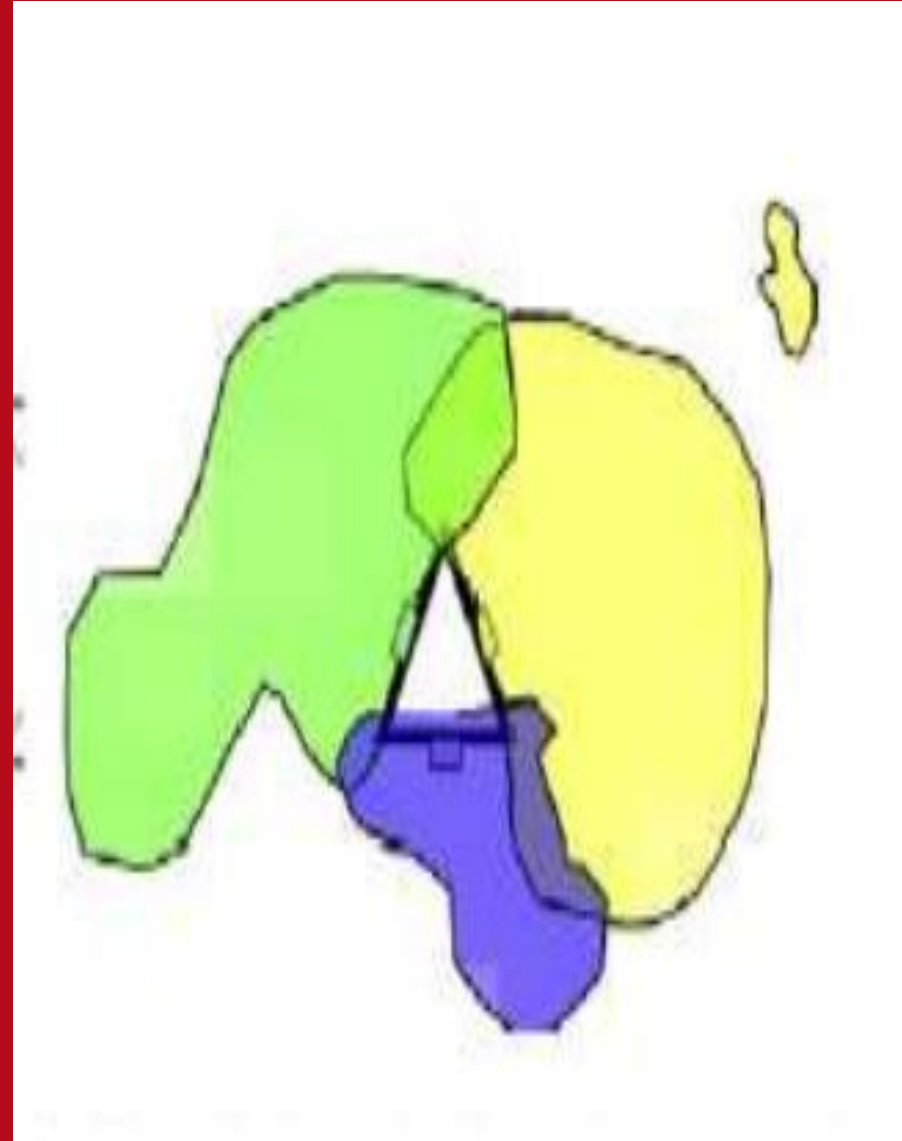
TRUTH #1:

- Coverage areas of Cell Towers can range from as small as three square miles
 - To as large as 20 square miles
 - A Radio wave carrying a cell phone communication can travel as far as 26 miles



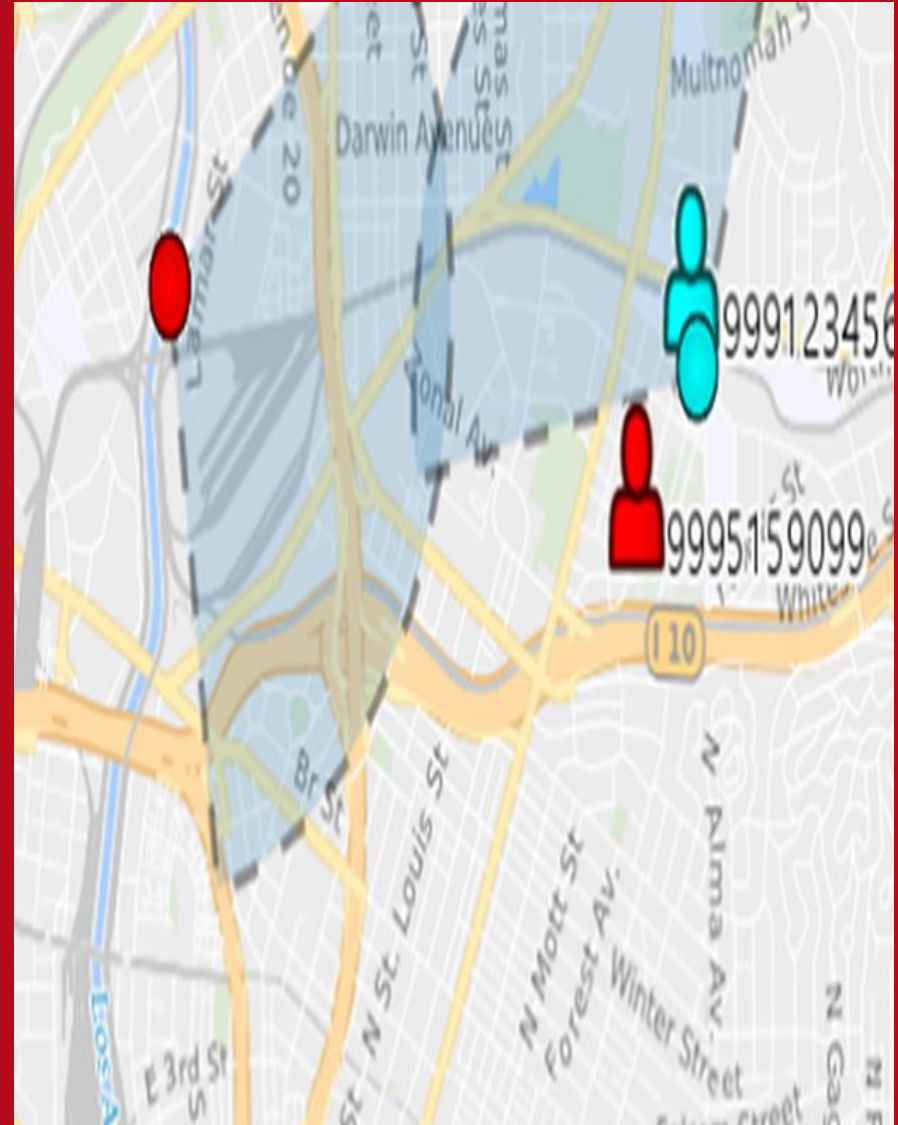
TRUTH #2:

- There is NO defined shape for the Coverage of an Antennae (or a Tower for that Fact)
- Coverage shapes and Zones of Coverage are Controlled by the Cell Companies
- Some Coverage areas are oblong to cover an area like a lake or a highway



TRUTH #3:

- Two Cell Phones in the same Coverage area may connect to two different Antennae or two different towers



IS TESTIMONY RELIABLE ?

- 🎬 Does the FBI have any Data to Support their Coverage Map ?





CELL ANTENNA COVERAGE



- Can Only Accurately Determine Coverage Area of a Cell Tower Antenna by Conducting a Drive by Test
 - Do Cell Phone Companies keep actual data about Coverage Area ?
 - Does the FBI Conduct Drive by Testing of Cell Tower Antennas to Support their Testimony ?
 - Does the FBI Subpoena the Cell Phone Providers Records regarding Coverage area ?



IS TESTIMONY RELIABLE ?

- Is HCSL Testimony Based Upon Faulty Assumptions ?

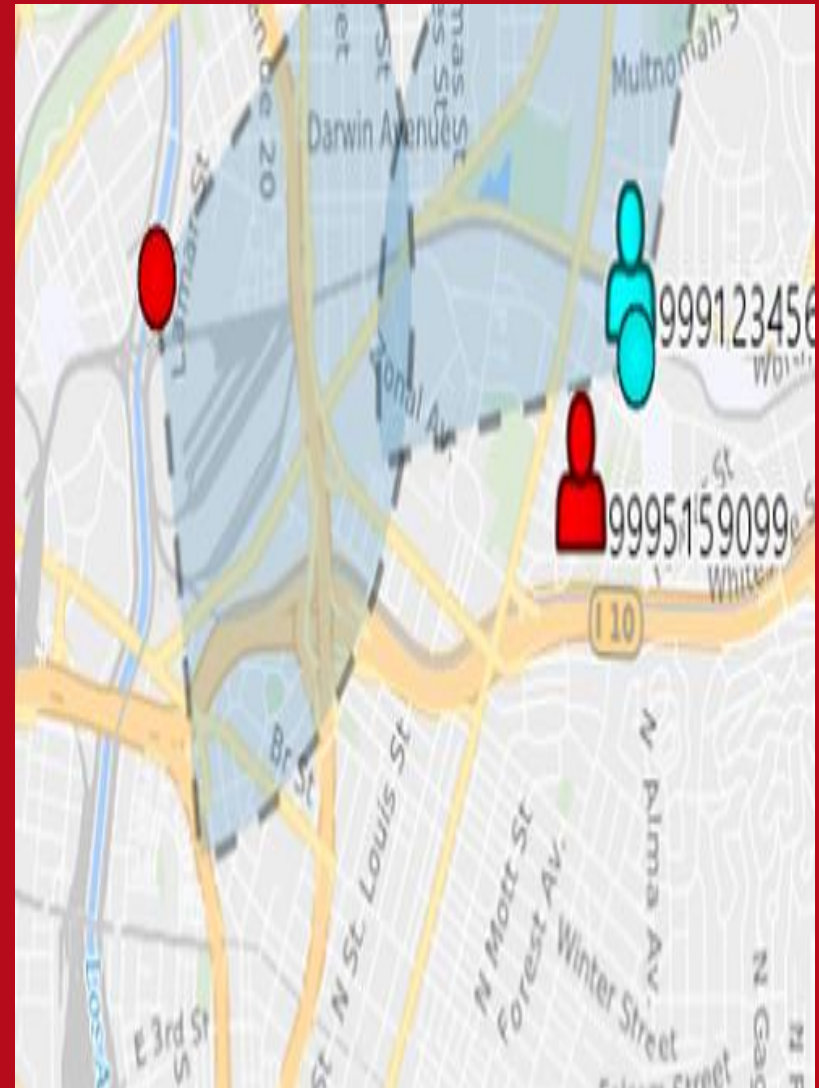


FALSE ASSUMPTIONS ON WHICH HCSLI PREMISED

- A Cell Phone will Connect with the Tower with which it is Closest
- A Cell Phone will connect with the Antennae which Covers the Zone in which it is Located
- A Tower will only pass a Communication to an Antenna which covers the Zone in which the Cell Phone is Located
- When a Cell Phone communicates with a Sector Antenna, it will Record that Data even if it is Passed to a Different Tower/ Antennae

TRUTH #4

- Cell Phones Connect with the Cell Tower with the Strongest Signal, NOT the Closest Tower



FACTORS WHICH AFFECT SIGNAL STRENGTH

- Weather
- Buildings
- Topography
- Moving Vehicles
- Bandwith of the Phone
- Height of the Tower
- Wattage of the Tower

QUESTION:

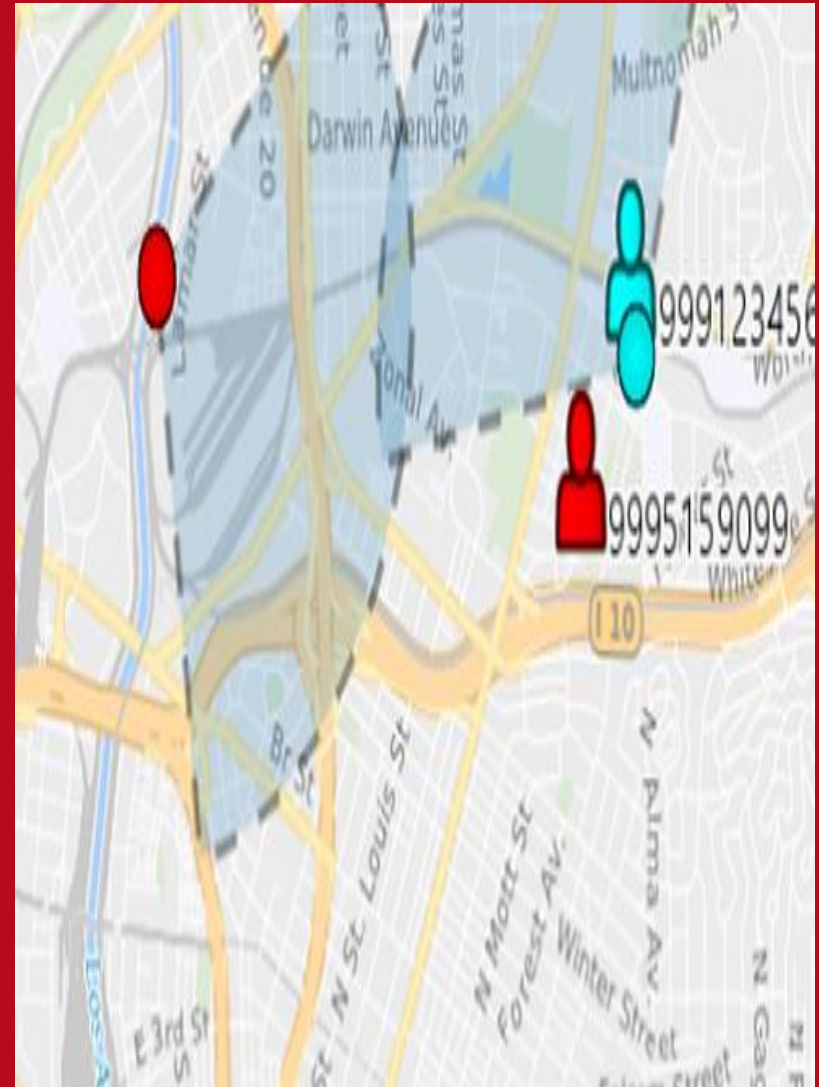
- What if Sector Antenna (Alpha), (Beta), or (Gamma), in which the Cell Phone is Located, does not have sufficient Capacity to handle the communication, what will happen with the Call ?
 - (1) The Call will be Dropped ?
 - (2) Call Will be Sent to the next Tower with Sufficient Capacity on the Sector Antenna which covers the Direction from which the Call Came ?





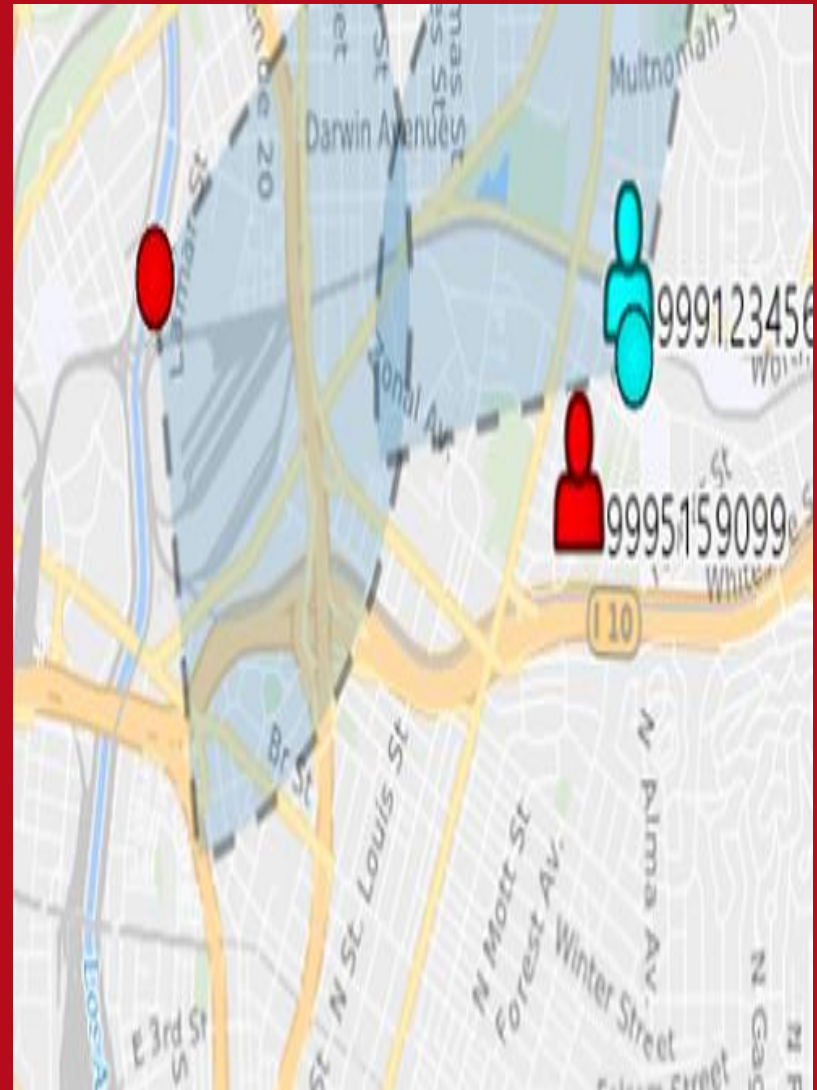
TRUTH #5

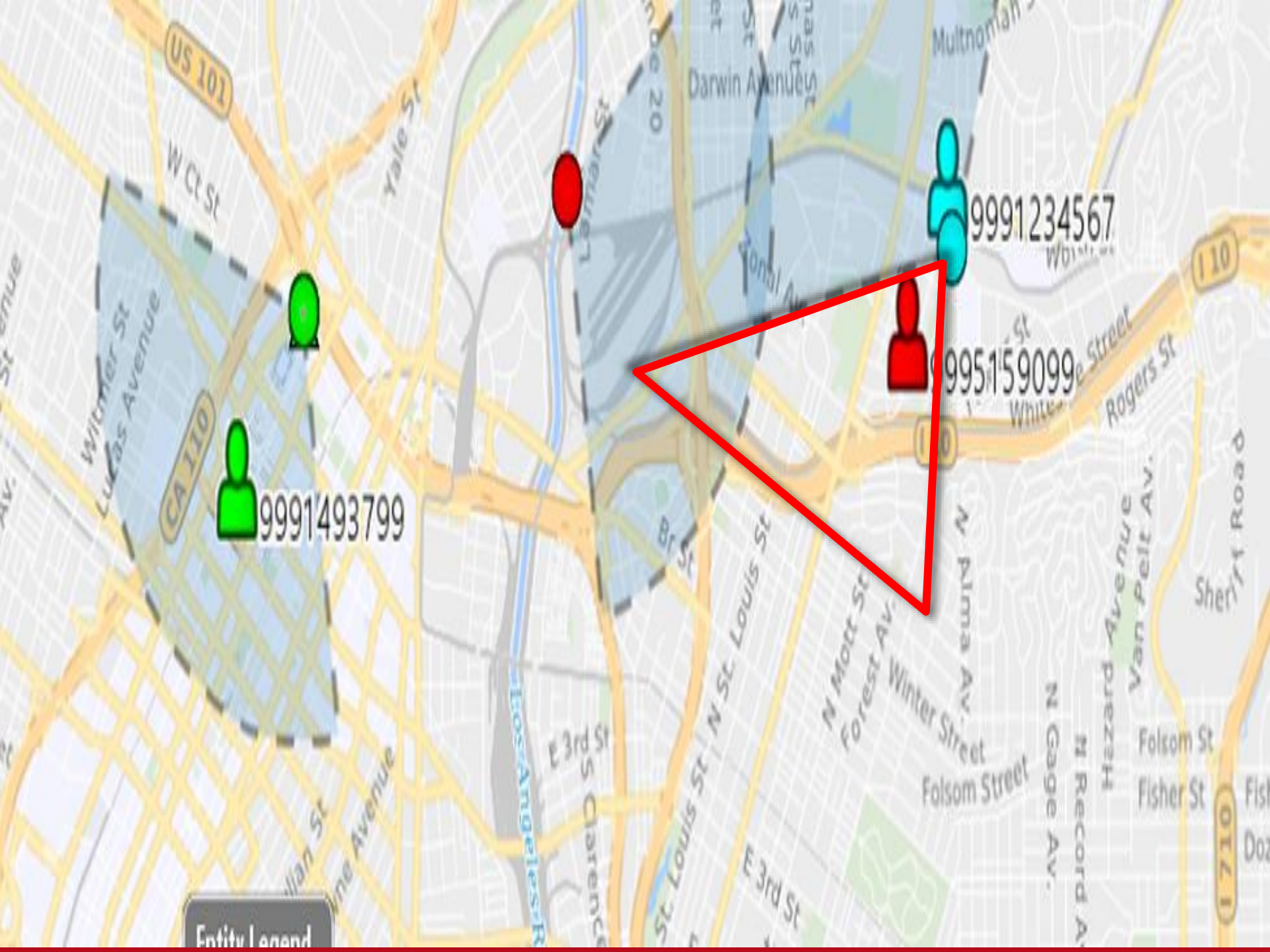
- 🎬 The FBI Assumes this will Occur
 - Are they Right or Wrong ?



WHAT WILL HAPPEN ?

- ❶ The Distributor will See if there is Sufficient Capacity on Another Antenna on the Tower with the Strongest Signal





US 101

CA 110

I 10

I 710

Entity Legend

9991493799

9991234567

995159099

W Cl St

Yale St

Wilmer St
Lukas Avenue

William St
Vine Avenue

E 3rd St
Clarence

St. Louis St
N St. Louis St

N Mott St
Forest Av.

Folsom Street

N Gage Av.
N Record Av.

Hezard Avenue
Van Pelt Av.

Folsom St
Fisher St

Fish
Doz

Rogers St

White Street

N Palma Av.

Winter Street

Sheriff Road

Darwin Avenue

Multnomah

Larkin St

De 20

Central Avenue

St

St

St

St

St

St

St

St

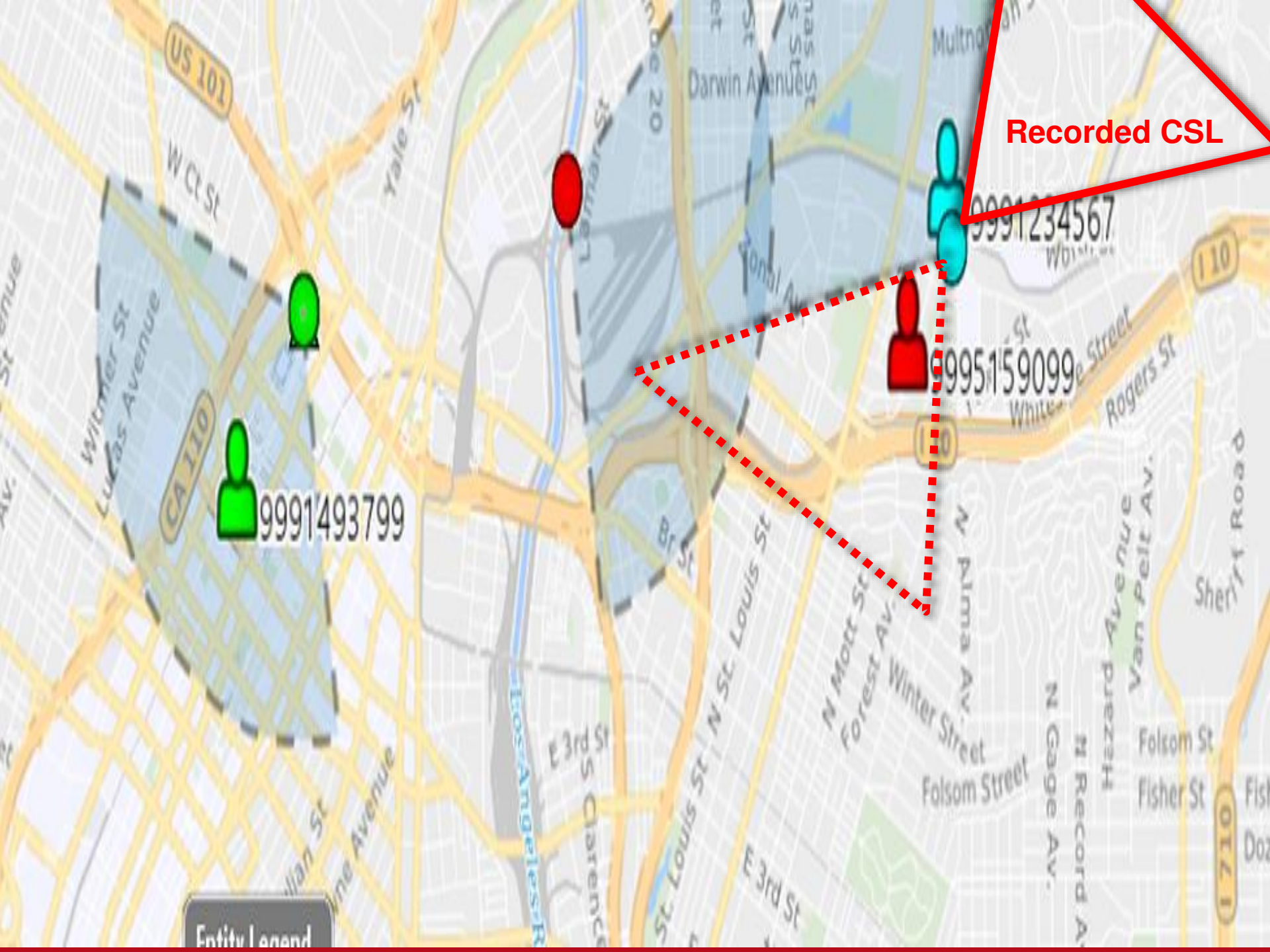
St

St

St

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Recorded CSL

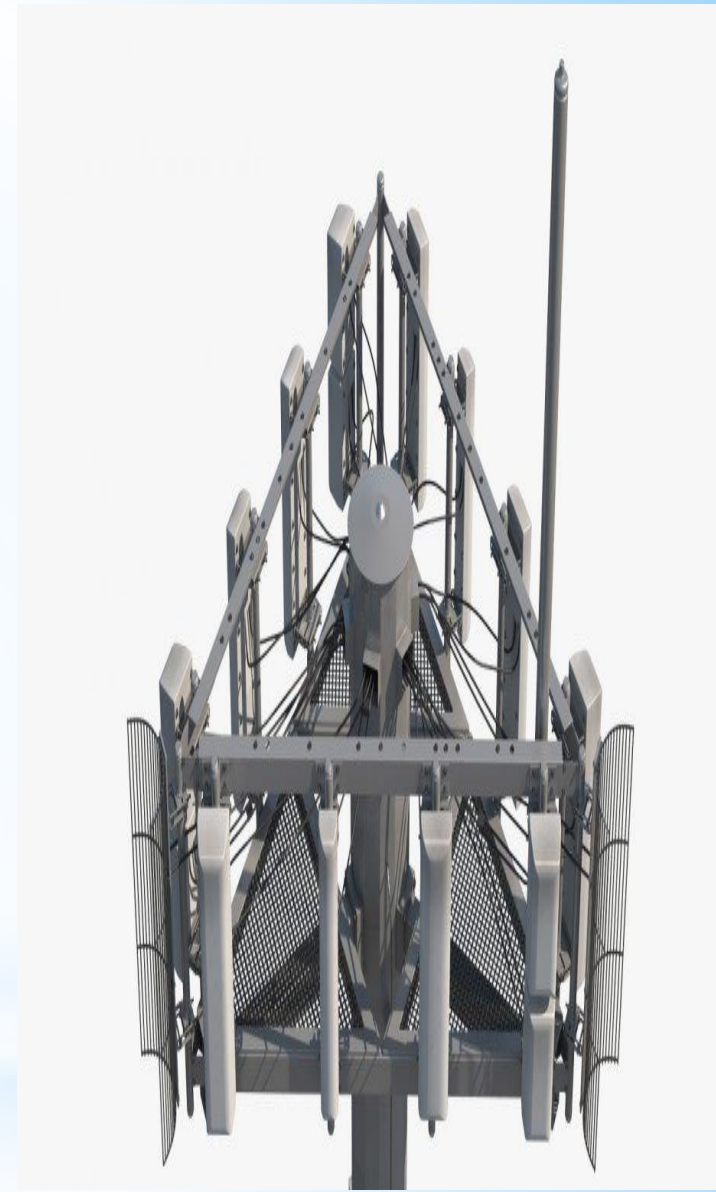
9991493799

9991234567

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Entity Legend

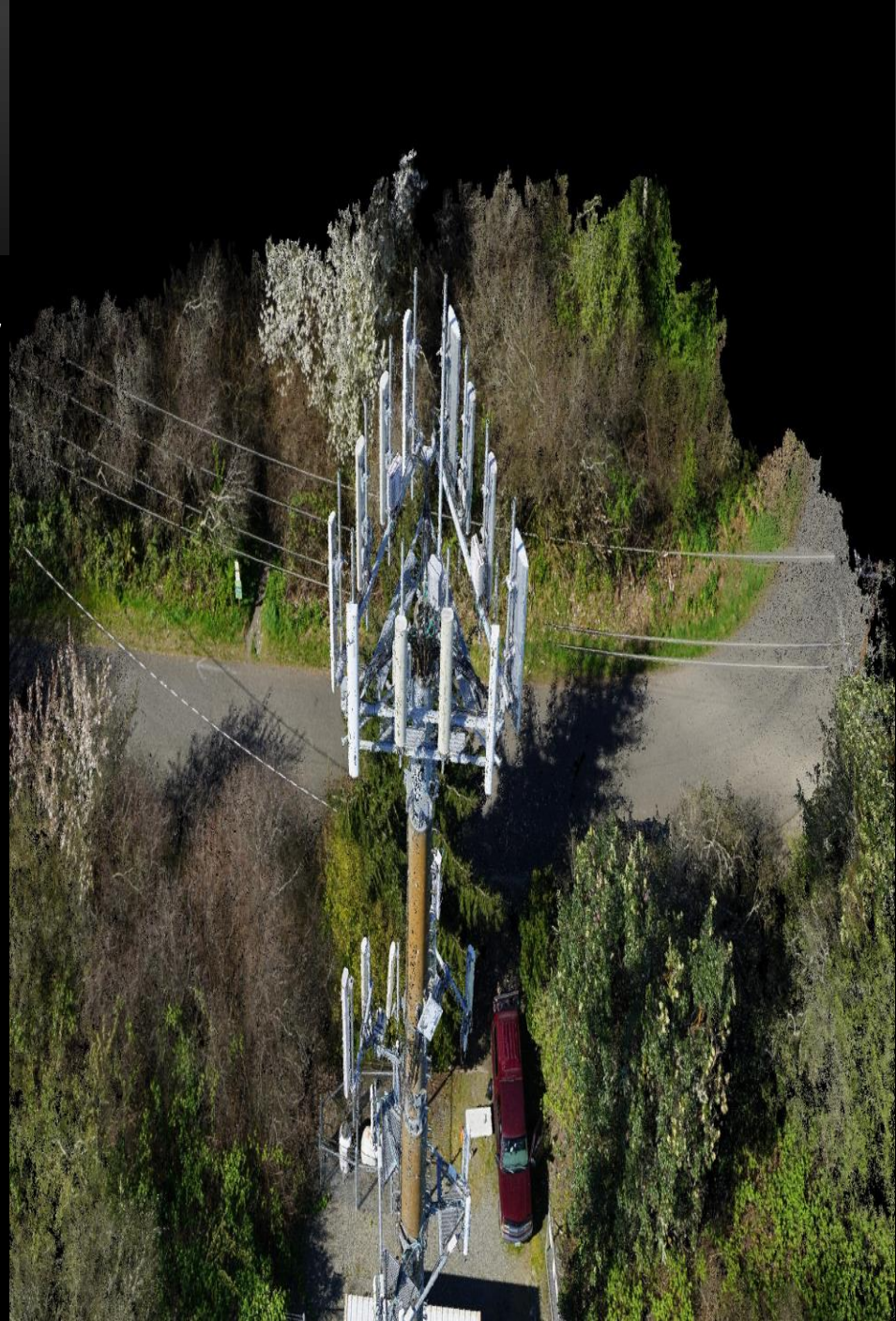
- If Beta or Gamma has available Capacity, Distributor will send communication there
- Even if Antenna does not cover the zone from which the communication came
 - Once the Communication is Connected with an Antennae, it is First Recorded
 - No Record of initial Contact with Distributor



* How Cell Phone Towers Work

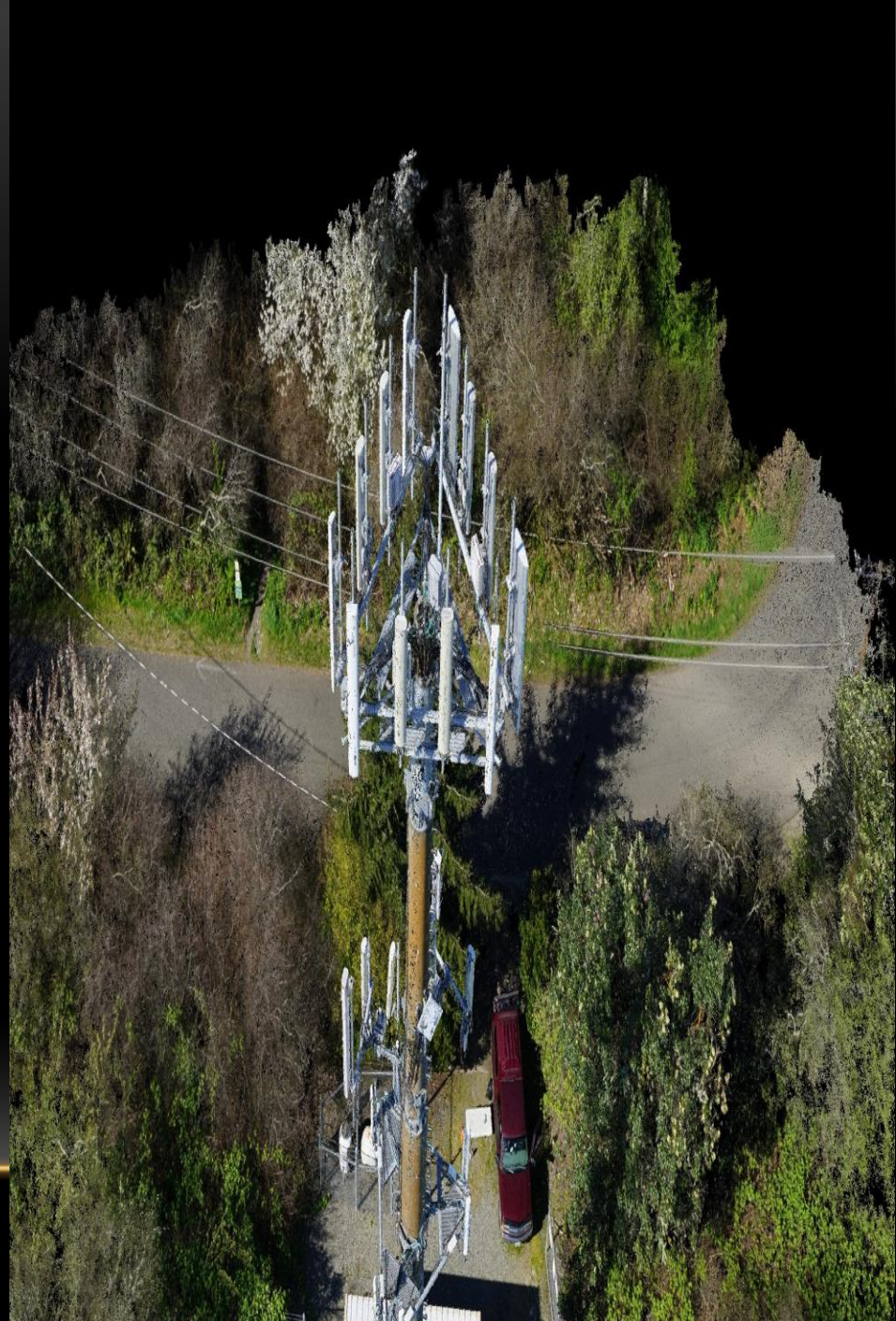
QUESTION:

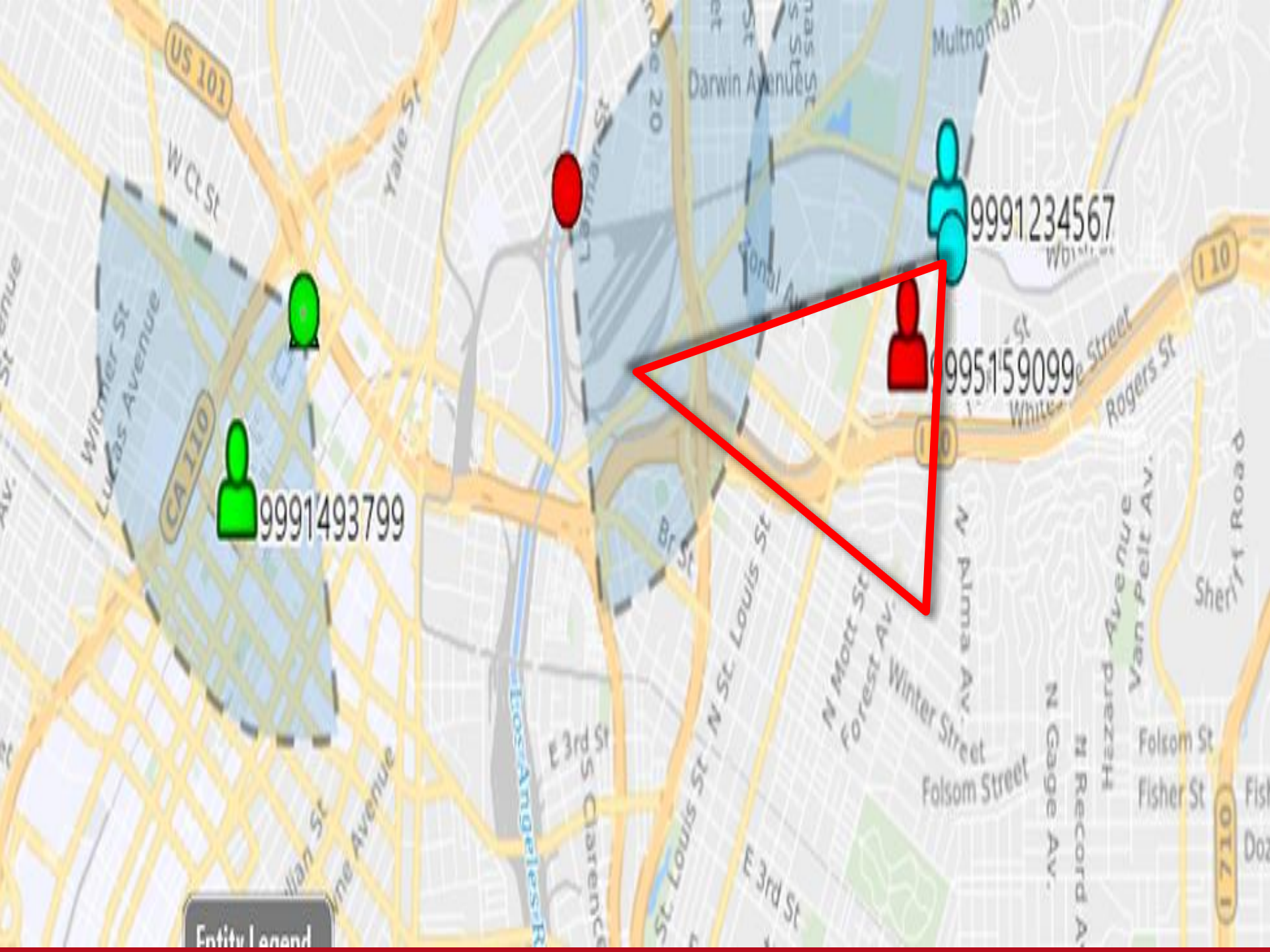
- What if none of the Antenna Sectors (Alpha), (Beta), or (Gamma), on the Tower with the Strongest signal in relation to the Cell Phone has sufficient capacity to handle the call, what will happen with the Communication to handle the call ?
 - (1) The Call Will be Dropped
 - (2) The Call will be sent to a Tower with a Competing Provider with the Same Signal Strength
 - (3) The Call will be sent to Tower with the Next Strongest Signal Strength



QUESTION:

- If none of the Antenna Sectors (Alpha), (Beta), or (Gamma), on the Tower with the Strongest signal in relation to the Cell Phone has sufficient capacity to handle the call, will the Call only be Transferred if it can be Handled by the Antenna which Covers the Direction from which the Call Came ?





US 101

CA 110

I 10

I 710

Entity Legend

9991493799

9991234567

995159099

W Cl St

Yale St

Darwin Avenue

Multnomah

Wilmer St
Lukas Avenue

35th Avenue

De 20

White St

Rogers St

E 3rd St
Clarence

St. Louis St
N St. Louis St

N Mott St
Forest Av.

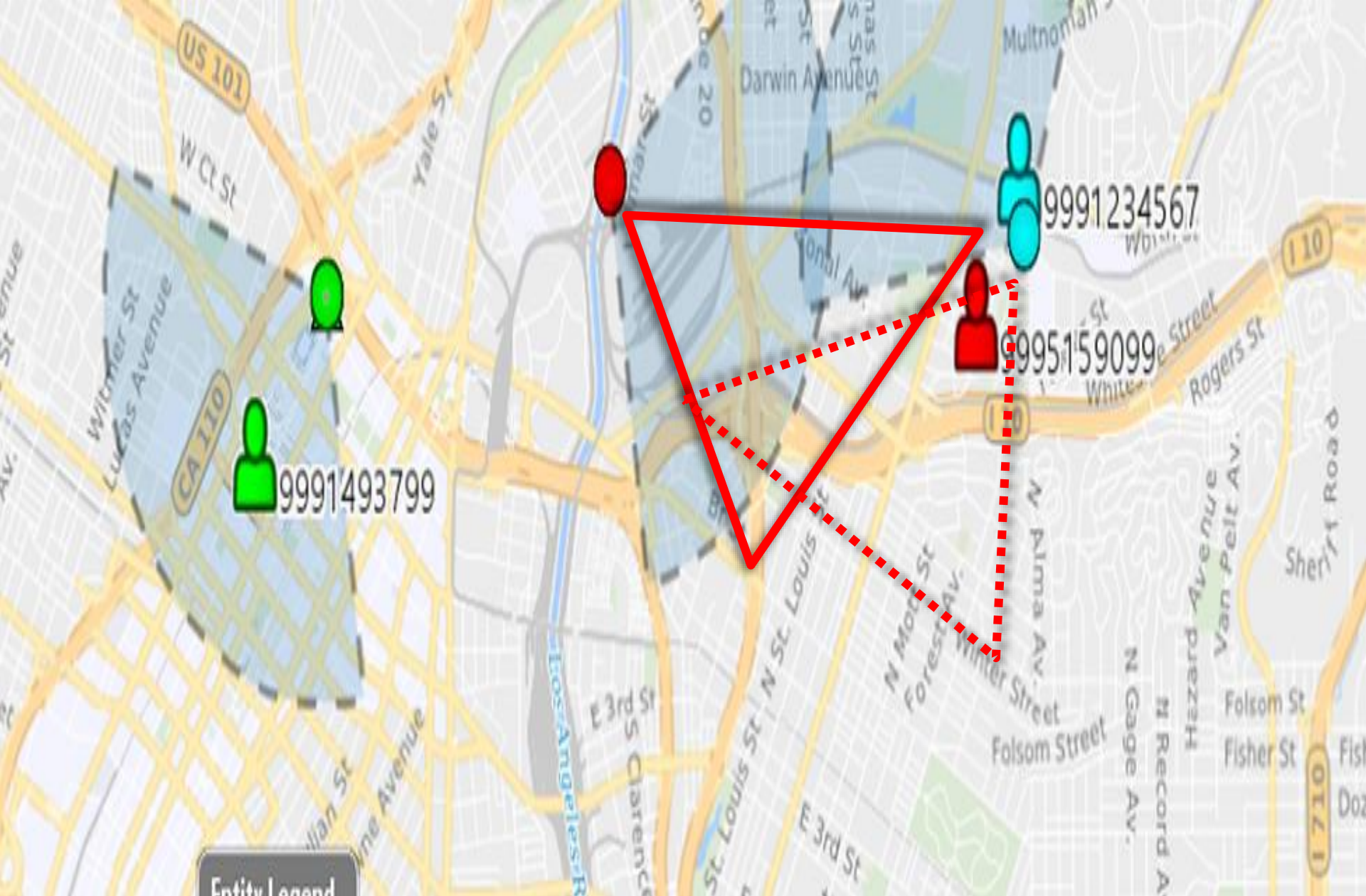
Winter Street
Folsom Street

N Gage Av.
N Record Av.

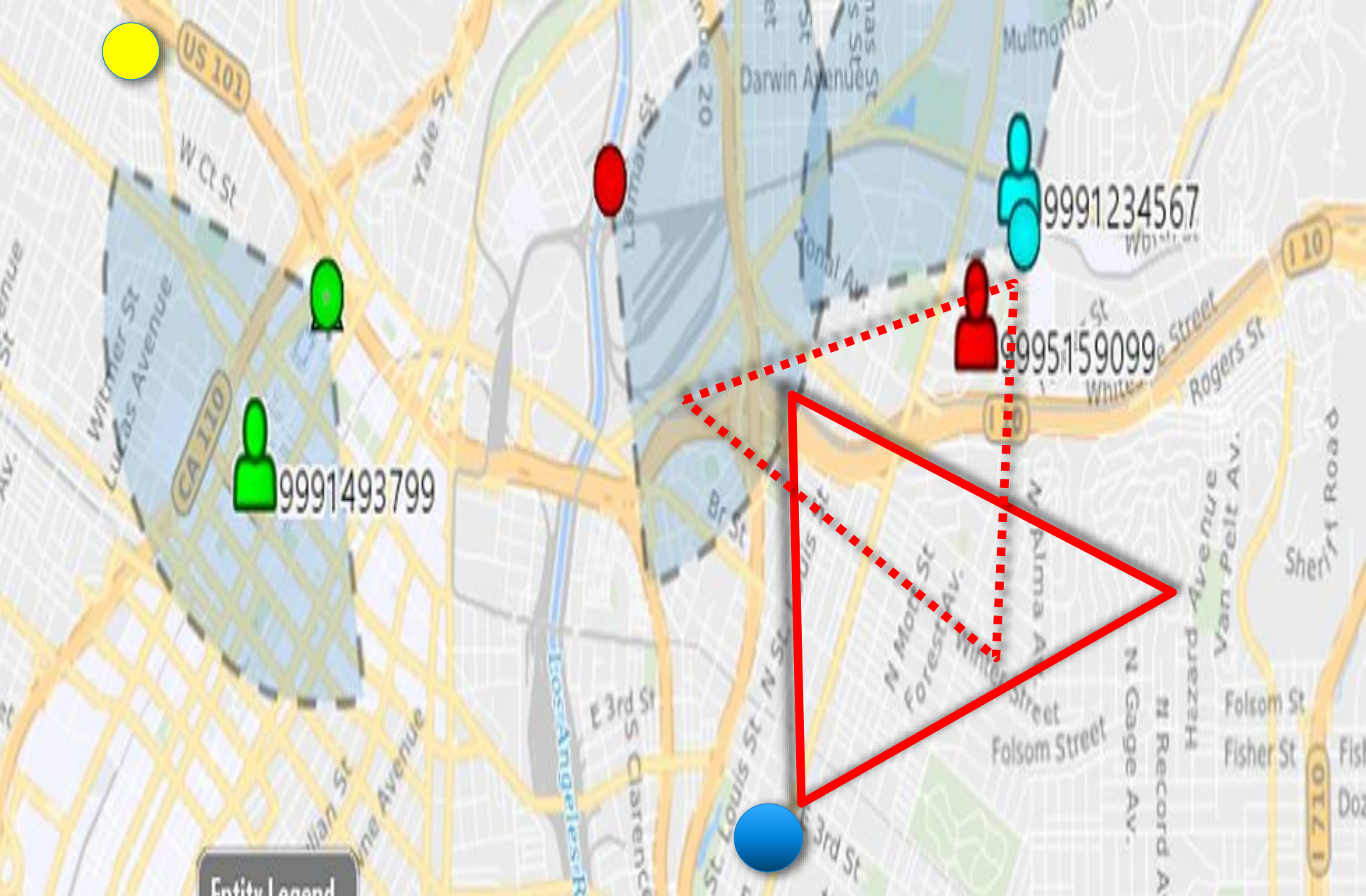
Hezard Avenue
Van Pelt Av.

Folsom St
Fisher St

Sheriff Road



FBI FALSELY ASSUMES



FBI FALSELY ASSUMES

Recorded CSL



9991493799



9991234567



9995159099

WHAT REALLY MAY OCCUR

HOW MANY TESTS HAVE BEEN CONDUCTED TO DETERMINE
THE ACCURACY OF FBI TESTIMONY ABOUT LOCATION OF A
CELL PHONE USING HCSLI?



ZERO



dreamstime

Empirical Testing Doesn't Matter. All that Matters is the Training and Experience of Dedicated and Talented Law Enforcement Officers in Providing their Expert Opinions



➤ Is Fairstein Right or Wrong ?



- Nothing – not personal experience or professional practices – can substitute for adequate empirical demonstration of accuracy
 - Daubert, 509 US at 593



OBJECTION!

I have found a flaw in your argument, so kindly shut the fuck up.

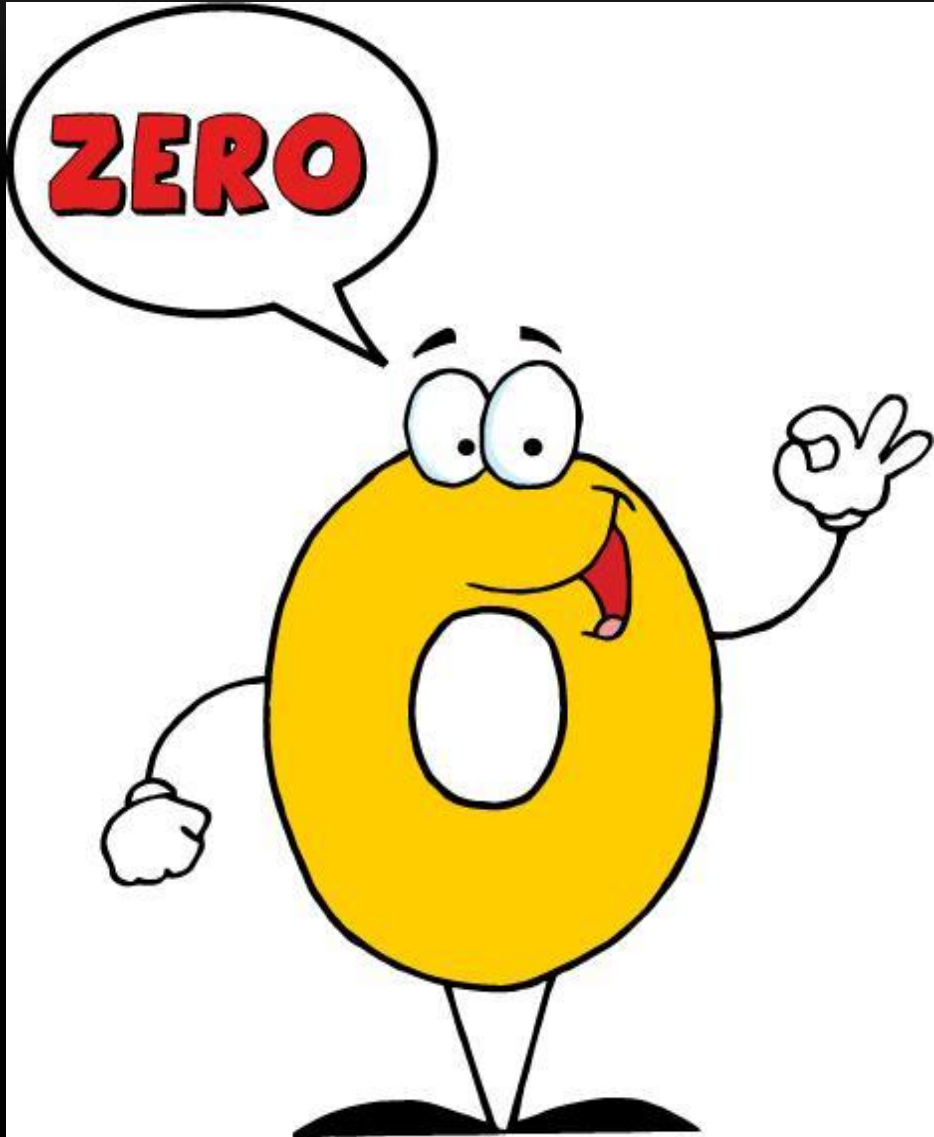
GOVERNMENT HYPOCRISY

- In a brief filed in District Court, the Government argued Cell Site location information is TOO IMPRECISE to place a wireless phone within a constitutionally protected space
- US v. Jones, 908 F.Supp.2d 203 (D.D.C. 2013)

GOVERNMENT HYPOCRISY

- Specifically the US argued, “Inferences about location drawn from cell-site information are far less precise than GPS data and do not permit a detailed reconstruction of a person’s movements”.
- Carpenter v. US, 138 S.Ct. 2206 (2018)

WHAT DOES THE "FBI" CONSIDER TO BE THE ERROR RATE?



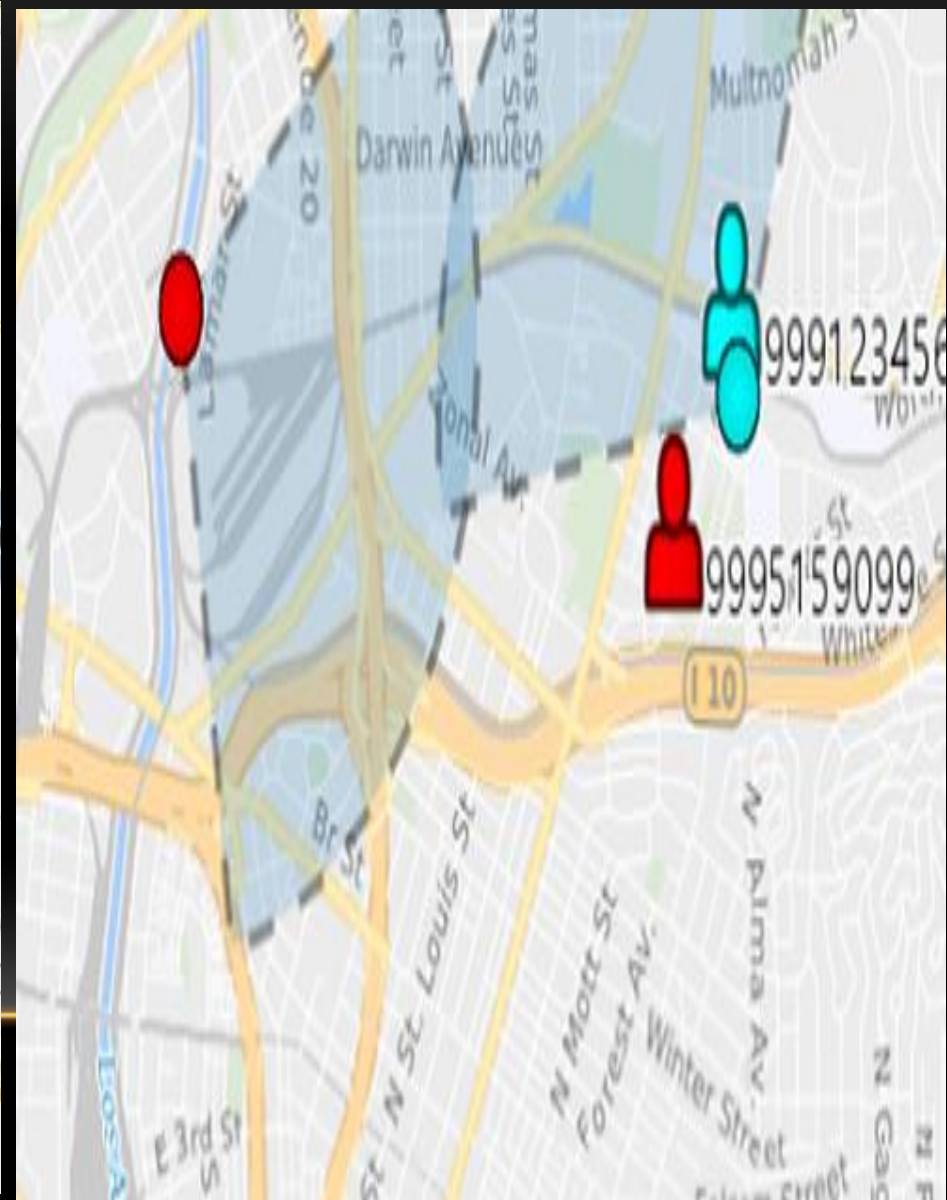
LEVEL 2: LIMIT SCOPE OF TESTIMONY

Motions *In Limine*

- File Motion *In Limine* from Preventing FBI Analyst from Giving an Opinion regarding the location of the Cell Phone
 - Limit Testimony to Cell Tower with which Phone Connected
 - Remove the Coverage Cones from the Map



LEVEL 2: LIMIT SCOPE OF TESTIMONY



LIMIT “OPINION” TESTIMONY

- In US v. Medley, 312 F.Supp.3d 493, 503 (D. MD 2018)
 - Ruled Agent could NOT offer location opinion
 - Stating the phone can only be placed in the general area of the cell tower sector
 - Can NOT be placed more specifically within the Sector



DISPEL THE AURA OF EXPERTISE

WHAT WE ARE TRYING TO PROTECT AGAINST



TESTIMONY OF CELL SITE “EXPERT”



- The Cell Phone was Located in the Shaded Zone at the time of the Alleged Crime,

...To a Reasonable Degree of Technical Certainty

➤ What's the Problem with this Testimony ?

LEVEL 3: DISPEL AURA OF EXPERTISE

RESEARCH “EXPERT’S” BACKGROUND/ QUALIFICATIONS

- Get a Copy of Witness’ CV.
 - Has she published
 - Does she teach
 - What training does she have
 - Has she received any awards for her work
 - What Professional Organizations is she a member of
 - What Licenses/ Certifications does she have

ATTACKING THE EXPERT TESTIMONY

■ Dispel **Aura of Expertise** of Government's Witness

○ Challenging Witnesses Experience/Background

- Witness not Unbiased
- Works for the Government
- Paid by the Government
- Same Government which pays the Prosecutor
- Doesn't work for a Cell Phone Provider
- Never Worked for a Cell Phone Provider
- Never Trained by the Cell Phone Provider

ATTACKING THE EXPERT TESTIMONY

■ Dispel **Aura of Expertise** of Government's Witness

- Challenging Witnesses Experience/Background
 - Did not Conduct a Drive Test
 - Did Not go to the Scene
 - Does not Know What the Cell Tower Looks Like
 - Does Not Know what Buildings are in the Area
 - Does not know the Topography of the Area
 - Did not Look at the Nearby Cell Sites in the Area

EXPOSE WITNESS' BIAS

- State's Witness NOT Objective
- Works Closely & Exclusively for Police and Prosecution
 - Trained by and with the Government
 - Never testified on behalf of the Defense

DISPELLING AURA OF EXPERTISE

➤ Expose willingness of State's witness to adapt testimony to conform to the facts of Prosecution's case

➤ Review prior Testimony

- What will Witness likely say
- What will Witness claim in response to Cross
- What is Witness' Response to Authoritative Treatises/ Studies which Support Different Opinions

➤ Opinion NOT Based on Scientifically/Technically Valid Principles

❖ Witness Knows what Prosecution wants BEFORE conducting tests

FOURTH LINE OF DEFENSE:

- Limit the Effectiveness or Persuasiveness of Cell Site Location Testimony



PERSUASION

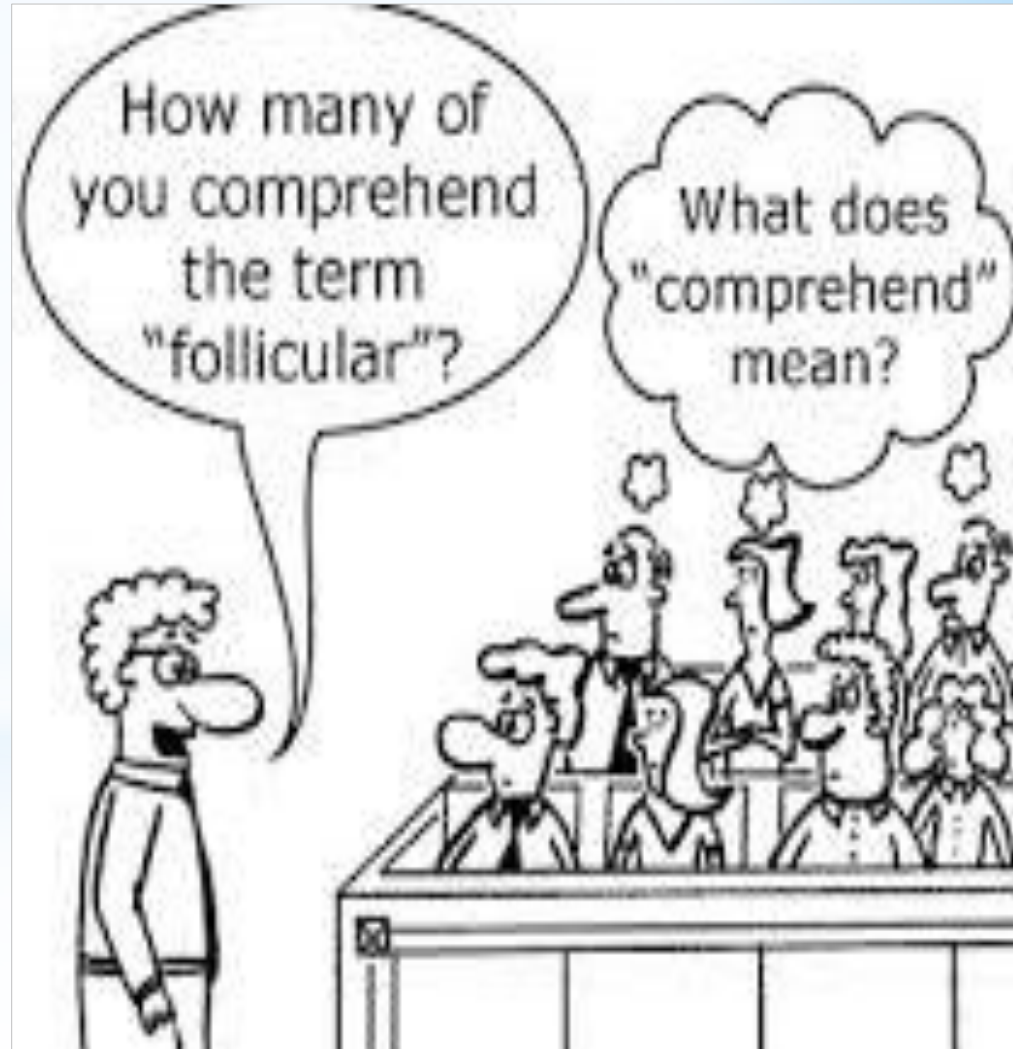
Because sometimes saying "please" is not enough.

HOW TO PREPARE

- Study Expert's entire File
 - Notes, reports, emails, photographs
 - underlying Studies
- Must have working knowledge of the area of expertise
 - Don't just rely on your Expert to prepare you

CROSS EXAMINING THE STATE'S EXPERT

- * Become Familiar with Terminology associated with Cell Site Analysis
 - Be Prepared to Explain to the Jury what the Big Words mean





*“I am no longer
accepting the
things I cannot
change.
I am changing
the things I
cannot accept.”*

ANGELA DAVIS

Thank You



**GIDEON'S
PROMISE**

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Transforming Public Defense