CELL TOWER PLACEMENT

JOY ABDELMASSEH, MARK NABIL, MARK SAMIR, NERMEEN HAGGEG

Misr International University
جامعة مصر الدولية

Supervisor: Dr. Mohammed El-Gazzar
Teacher Assistant: Eng. Haytham Metawie
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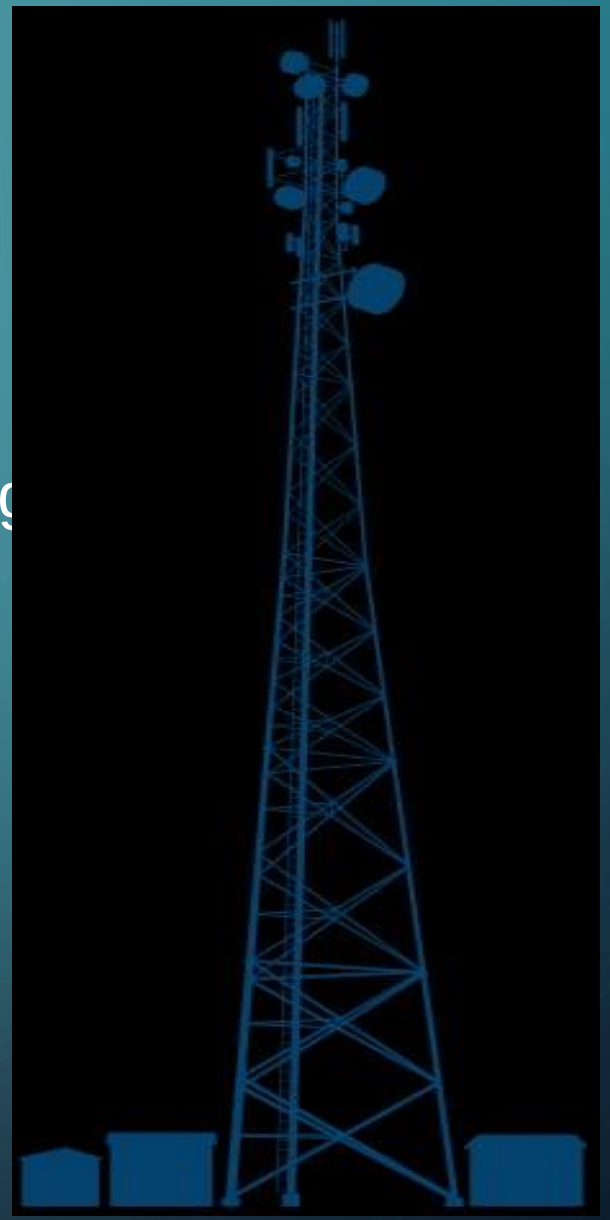
INTRODUCTION(1/1)

- Manually placement of cell tower is time consuming
- Phases of Placement a cell tower.
  1. Extract features from an image to get some analysis
  2. Build layers using GIS
  3. Automated decision by machine learning



RELATED WORK (1/3)

Using GIS for Measuring Mobile Tower Radiation on Human

- To place cell tower in correct place with consideration of surrounded building
- GIS , map up places which will accepted\not accepted zone
- Expected result: using ArcMAp
- 4 phases:
  1. Specify mobile towers
  2. Transfer data
  3. Analyze collected data
  4. result

[1] Abdullah Al–Sahly ; Mohammad Mehedi Hassan ; Majed Al–Rubaian ; Muhammad Al–Qurishi. Using GIS for Measuring Mobile Tower Radiation on Human. **IEEE *Xplore*:** 23 August 2018. **DOI:** 10.1109/CAIS.2018.8441997 "https://ieeexplore.ieee.org/document/8441997"

RELATED WORK (2/3)

Optimizing SOM for Cell Towers Distribution

- Aim: Reduce effort and cost for cell placement
- self organizing map (SOM) neural networks to guarantee the efficiency of service

[2 Haider Kadhim Hoomod , Intisar Al-Mejibli , Abbas IssaJabboory. Optimizing SOM for cell towers distribution. **IEEE *Xplore*:** 13 July 2017. Doi:10.1109/NTICT.2017.7976136**.** https://ieeexplore.ieee.org/document/7976136

RELATED WORK (3/3)

ANTENNA PLACEMENT OPTIMIZATION FOR CELLULAR NETWORKS

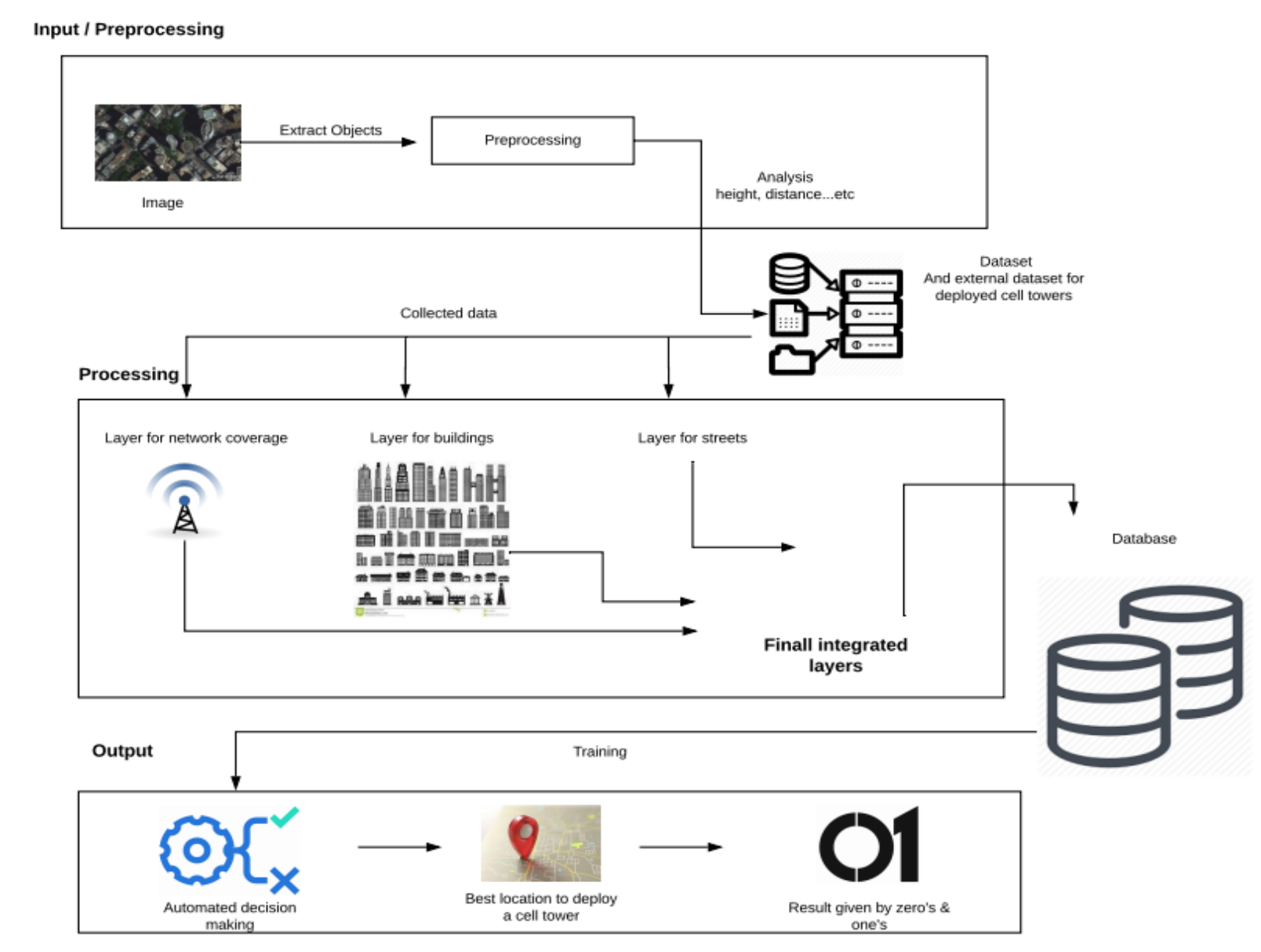
- Aim to decrease manually cell planning to be automated approaches
- Algorithm: Branch and bound
- Tech: optimal solution placement Through MATLAB simulations

[3] Hafiz, H., Aulakh, H., & Raahemifar, K. (2013). *Antenna placement optimization for cellular networks. 2013 26th IEEE Canadian Conference on Electrical and Computer Engineering (CCECE) .* doi:10.1109/ccece.2013.6567765 "https://ieeexplore.ieee.org/document/6567765"

PROBLEM STATEMENT

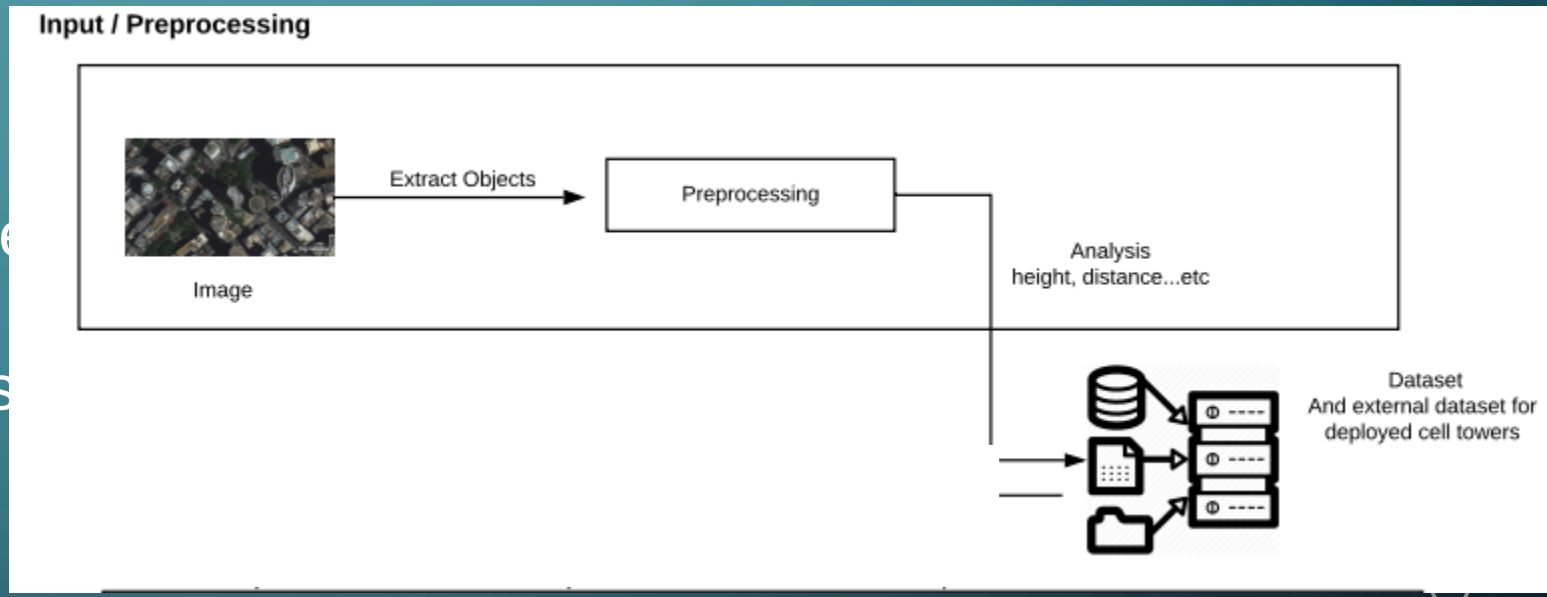
Finding the accurate place to fix over cell tower station costs mobile operators big chunks of money. Our target is to provide automated cell tower allocator system

SYSTEM OVERVIEW



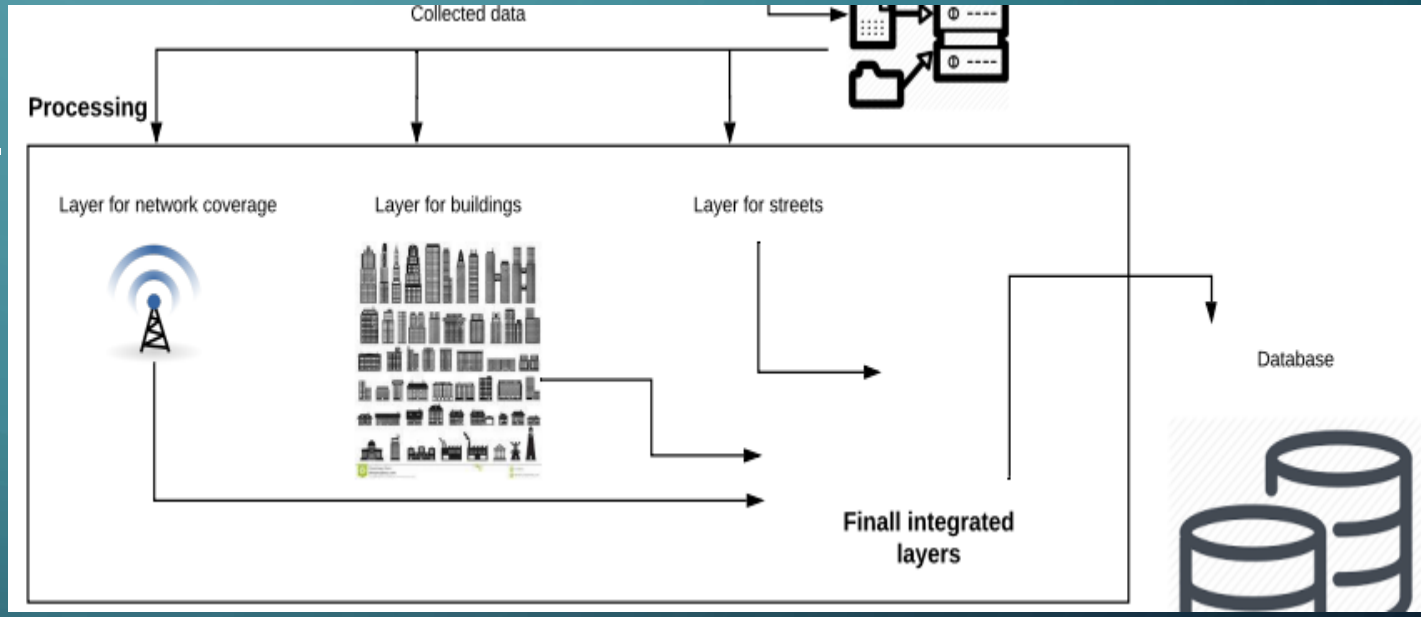
PREPROCESSING

1- Get an image.
2- Extract features from image.
3- Detect the height, the distance
between the buildings and
network coverage to build datas

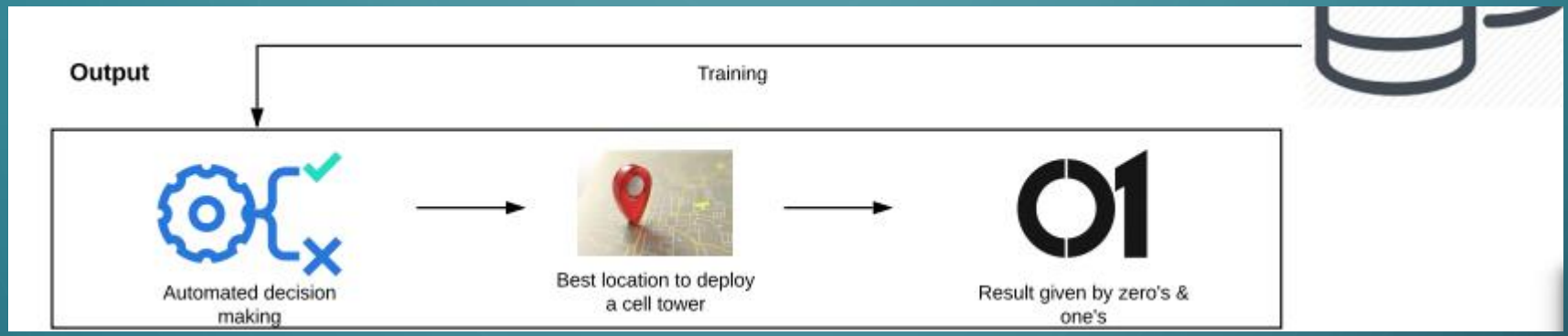


PROCESSING

1- Get the collected date from dataset.
2- Build layers.
   a) Layer for network coverage
   b) Layer for buildings
   c) Layer for streets
3- Integrate the layers together.



OUTPUT

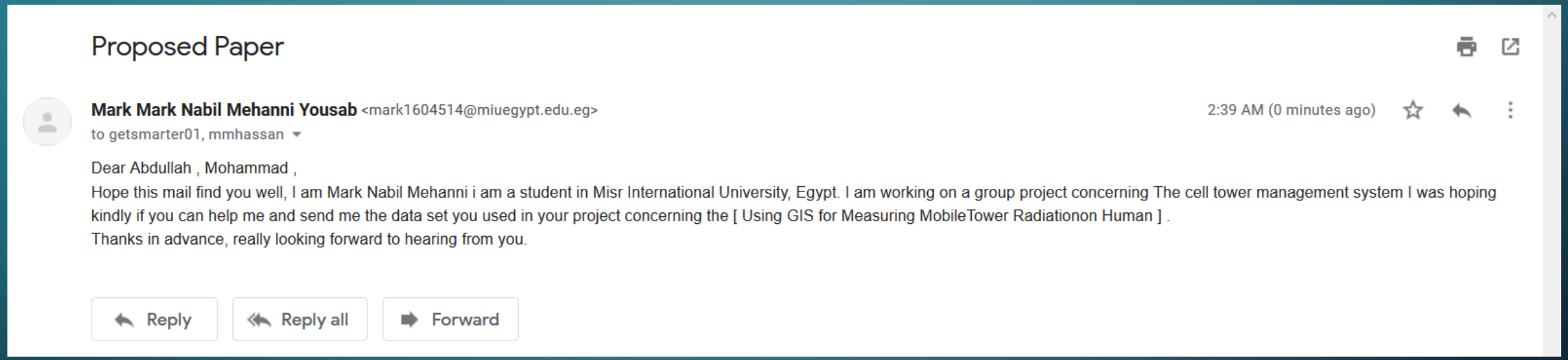


1. Locate the finest place to deploy an antenna.
2. Make an automatized decision
3. Giving the result in zero’s and one’s

EXPECTED RESULT

- By an automated decision get the most suitable place for deploying an antenna

SUPPORTED DOCUMENT



Proposed Paper

Mark Mark Nabil Mehanni Yousab <mark1604514@miuegypt.edu.eg>
to getsmarter01, mmhassan

2:39 AM (0 minutes ago)

Dear Abdullah , Mohammad ,
Hope this mail find you well, I am Mark Nabil Mehanni i am a student in Misr International University, Egypt. I am working on a group project concerning The cell tower management system I was hoping kindly if you can help me and send me the data set you used in your project concerning the [Using GIS for Measuring MobileTower Radiationon Human] .
Thanks in advance, really looking forward to hearing from you.

Reply | Reply all | Forward

DEMO

ANY QUESTIONS?

Thank You