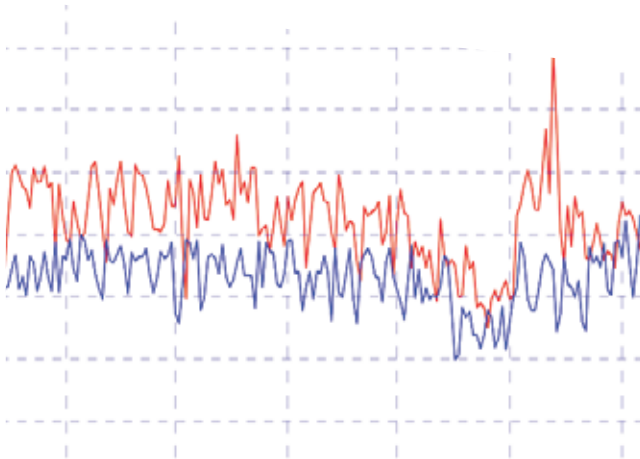


SIMULATIONS



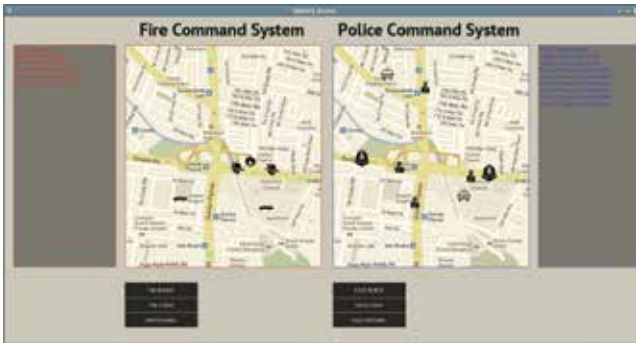
"Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful."

- George Box

Models are representations of real world concepts. A model can represent simple but powerful ideas, such as the Equations of Motion; or a model could represent complex phenomenon such as socio-economic activities of residents in a city. Simulations are based on models and mimic real world processes over time. Models and simulations can be designed to address problems on the scale of a city, or problems on the scale of atoms.

Modelling and simulation have been used extensively for prediction. Joshua Epstein provides uses for modelling other than prediction, in his article "Why Model?". At Fields of View, we use modelling and simulation as exploratory tools to understand socio-technical systems.

As an example, consider route planning for a public transportation systems in cities. Public transportation affects people from all walks of life. Presence of public transportation routes may spur growth in different parts of the city, adding to economic growth. It may also affect housing demand and prices. It may even spur people to service last mile passengers, thus creating a whole new market. The relationship between the passengers, the administrative institutions, the available resources and their delivery mechanisms has to be taken into account to plan a public transportation route. Through modelling and simulation, we explore the dynamics of interactions between the various sub-systems.



At Fields of View, we are using to exploratory models and simulations to:

- a) Identify potential resource saving strategies for cities.
- b) Derive and test standards for GIS data interoperability during emergency and disaster management.
- c) Understand the evolution of slums in Bangalore and how slums contribute to the growth of the city.
- d) Investigate how low cost changes to traffic junctions improve traffic conditions.