Data Flow for Liaison.

- **Step 1 – (Inactivity Detection (Flagging AIS signal Dropout as Intentional Or Unintentional))**
  - Base Normality Model
    - Input
      - Vessel Position
      - Radio Signal Strength Indicator
      - Vessel Length
    - Output
      - Risk Calculation
    - Model Tech
      - Support Vector Machines
  - Ship Normality Model
    - Input
      - Vessel Distance from Base Station
      - Base Station and Ship Vessel antenna height
    - Output
      - Risk Calculation
    - Model Tech
      - Theoretical/ Experiment Based Modelling
- **Step 2 – (Speed , Course and Location Prediction)**
  - Speed Prediction
    - Input
      - Latitude
      - Longitude
      - Time
      - COG
    - Output
      - Predicted Speed
    - Model Tech
      - Support Vector Regression
  - Course Prediction
    - Same as Speed Prediction
  - Location Prediction
    - Input
      - Latitude
      - Longitude
      - Timestamps
      - Course on ground
      - Speed on ground
    - Output

- Location of the ship after some time interval
  - Model Tech
    - Recurrent Neural Network (Long Short Term Memory)
- **Step 3 – (Flagging of encounter as an illegal activity)**
  - Transshipment Activity (Classification)
    - Input
      - Location Of ship
      - Predicted Speed
      - Distance between two vessels
      - Duration Of event
    - Output
      - Classification Of an inactivity as illegal
    - Model Tech
      - Artificial Neural Network
- **Step 4 (Future Aspect) – (Satellite Imagery)**
  - Using Satellite Data to classify ship as fishing or refrigeration vessel.
    - Input
      - Satellite Image
    - Output
      - Extracting Ships and classification
    - Model
      - Convolutional Neural Network