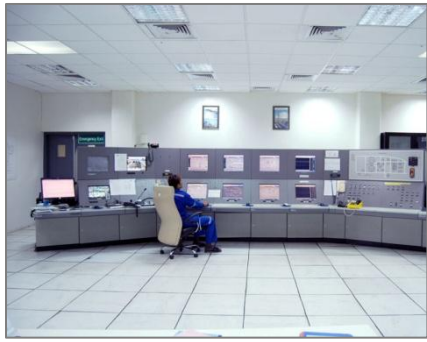
Effective Utilization of Re-gas Terminal through Simulation based Decision Support Tool



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Thursday, 4th April 2013

Hazira LNG Pvt. Ltd., India

JV between Shell Gas B.V. and Total Gaz Electricite Holdings France

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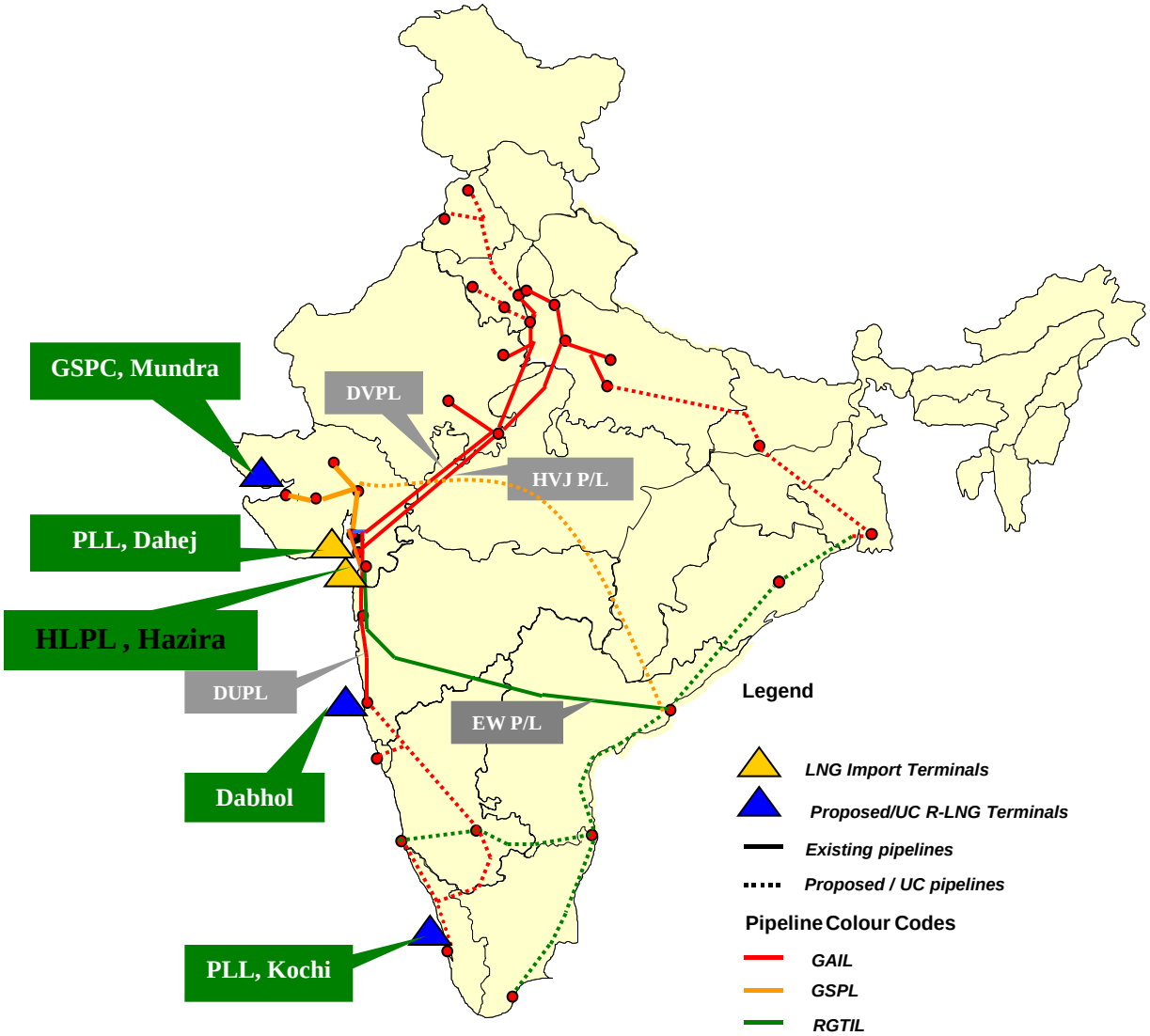
Agenda

- Hazira LNG Terminal
- Changing Business Model
- Cargo Scheduling : till now and going ahead..
- Scheduling Tool : Decision Support ensuring Effective terminal utilization

Hazira LNG receiving terminal overview

Location of Hazira Terminal



Hazira project - Snapshot

(S.S. Gemmata berthed at Hazira Port)

- Shareholders: Shell 74%, Total 26%
- Total Investment: $700mn+
- Infrastructure laid out for 5/10 mtpa Initial throughput : 3.6 mtpa
- LNG ship sizes – 75,000 to 205,000 m3
- Connected with Grids
  - GSPL grid-April 2005
  - HVJ & DUPL grid-March 2007
  - East West pipeline - April 2009

World class LNG terminal

In Pictures

Changing Business Model

From:

- Merchant terminal handling spot cargos and supplying RLNG to the Indian customers;

To:

- Mid-term, String deals with suppliers and downstream customers.
- HLPL provides services for Regasification to other customers.

It is now required to plan/ forecast for more than a year down the line ensuring proper cargo scheduling and effective terminal utilization .

Cargo scheduling till now..

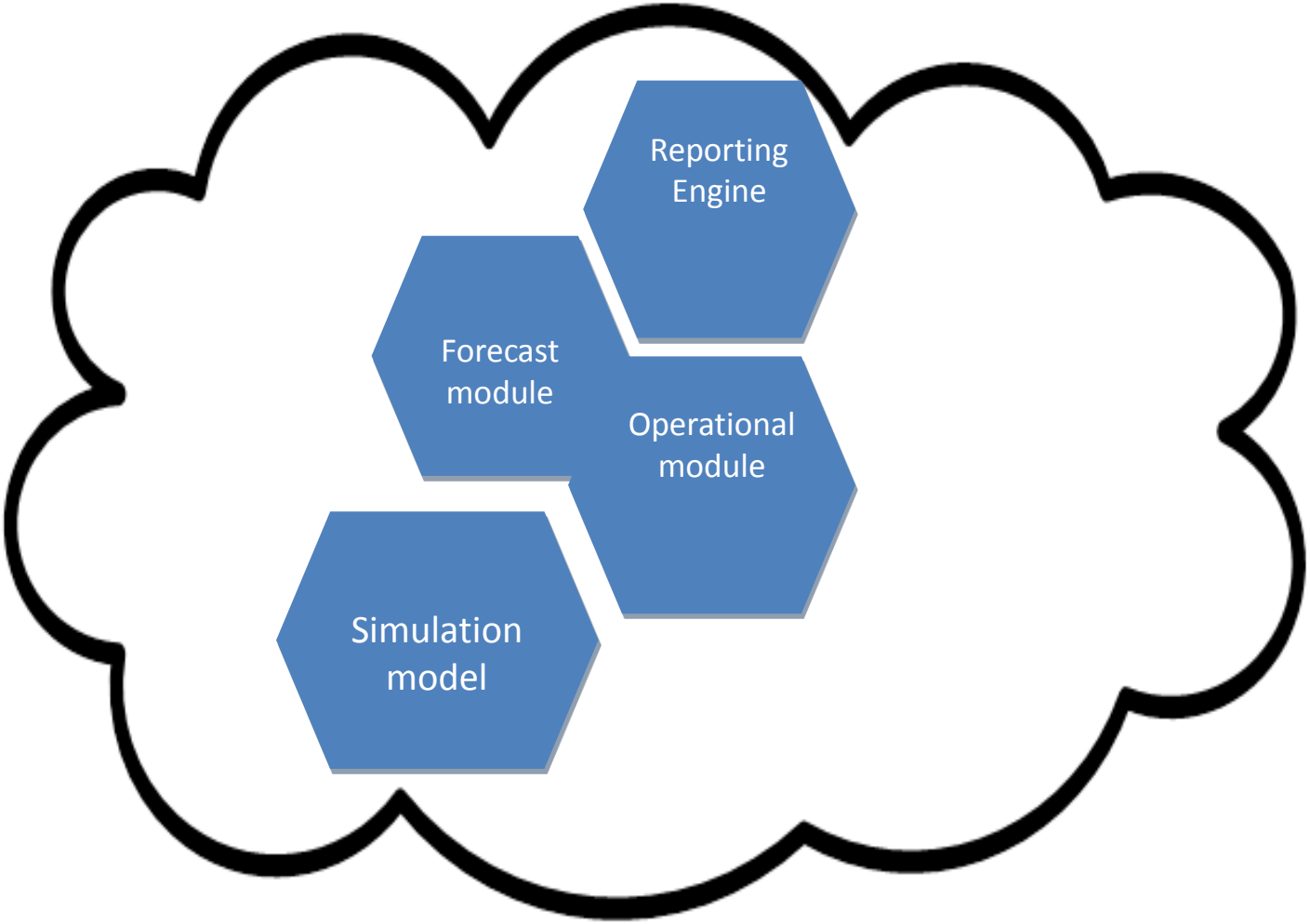
Limitations of earlier tool…

- No segregation of customer-wise inventory
- Inventory positions are based on daily averages and does not take into account split during the gas day
- Planning on variable customer offtake during contract period – not possible
- Planned maintenance & availability of plant are not taken into account in schedule
- Various versions with options worked : Difficult to keep track of final operational version

Limitations of earlier tool… contd.

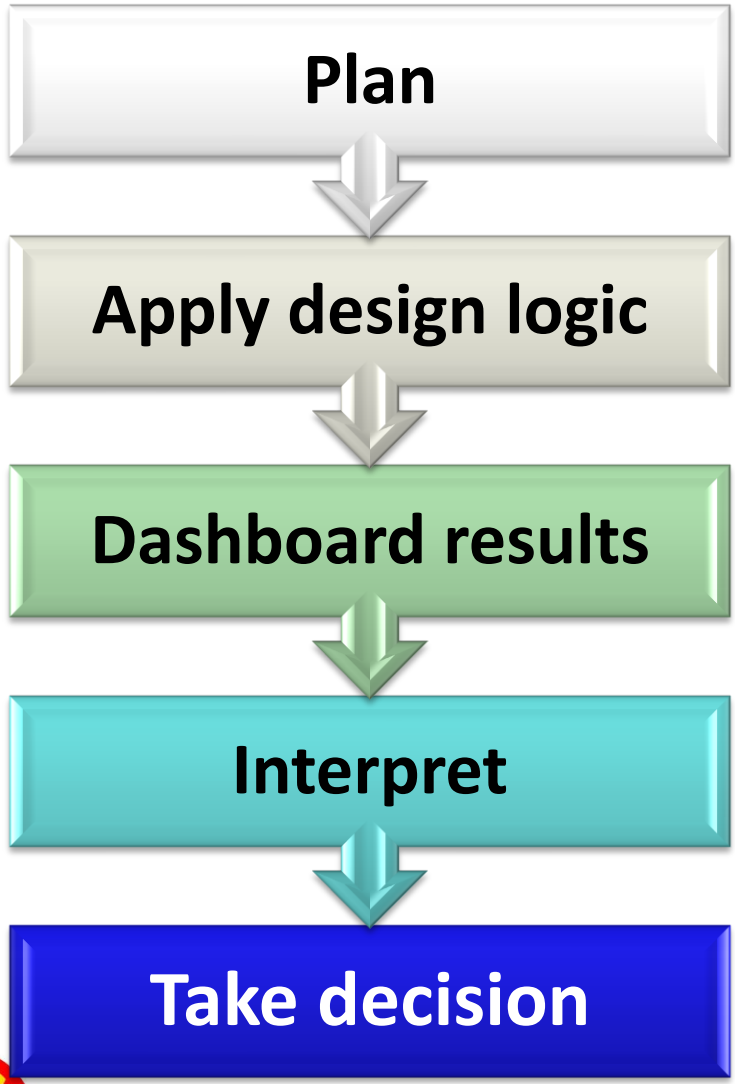
- Difficult to track changes made for checking feasibility : e.g. cargo arrival widow
- Does not support for vessel arrivals with multiple contracts (with different start and end dates)
- Does not take into account the daily consumption of LNG that is required for the regasification
- Tool requires the user to switch views continuously to plan the schedule, not user-friendly

Scheduling tool



Going ahead : Planning with Scheduling tool…

Scheduling tool…



- Planner to input all the details required for ADP/ specific cargo / deal
- Planner to apply Logic during data input
- Take decision on feasibility interpreting Dashboard results

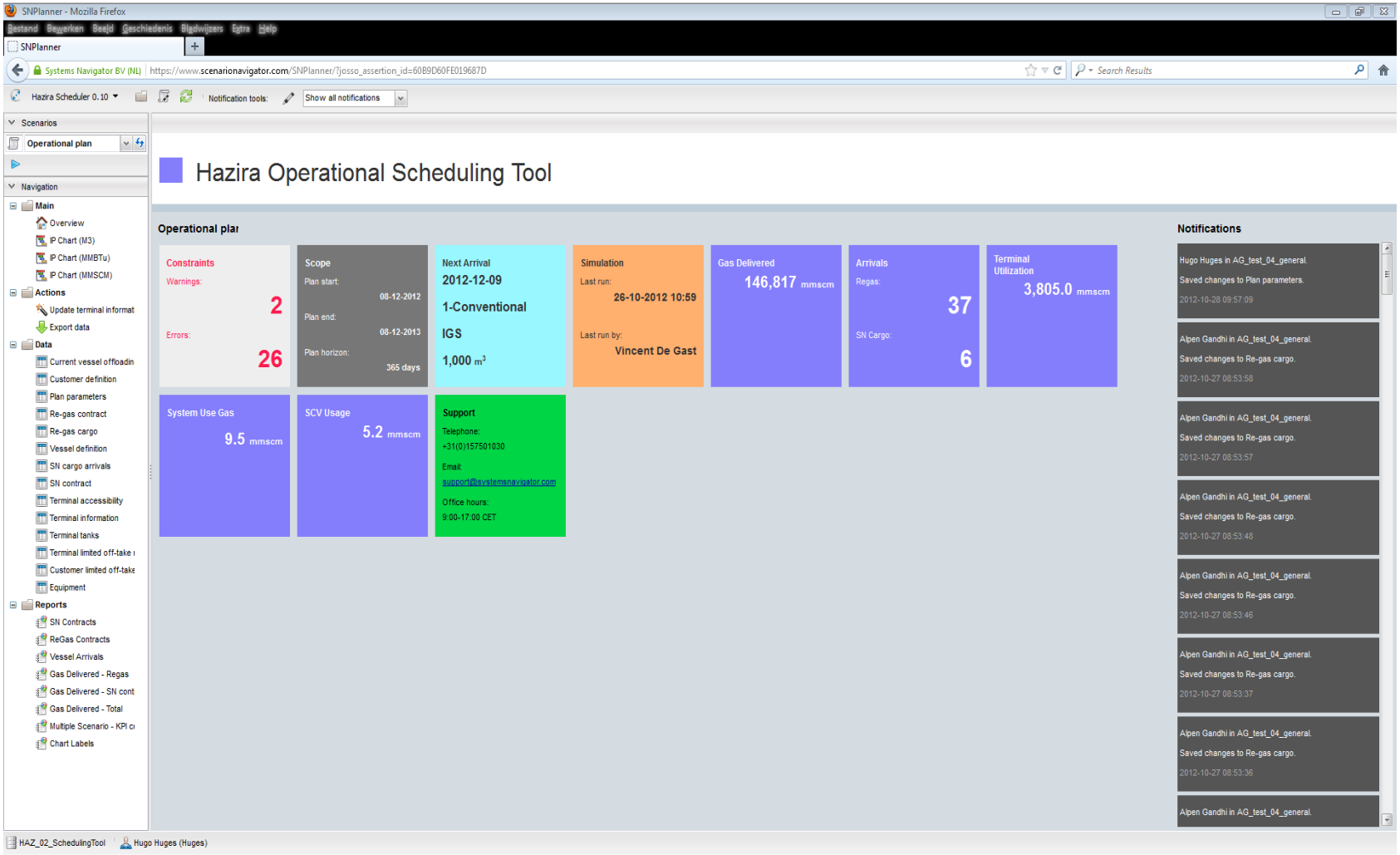
How it will work…

- Start with ADP inputs
- Key Parameters / details required for input :
  - Terminal tanks inventory
  - Terminal equipments constraints, planned maintenance schedule, SCV usage
  - Type of Vessel and Cargo-wise volume details
  - Cargo-wise arrival window
  - Customer and type of contract details : differentiate FGSA / Regas service deals
  - Contracts Ops. parameters: TCQ, DCQ, Evacuation days, % SUG etc.

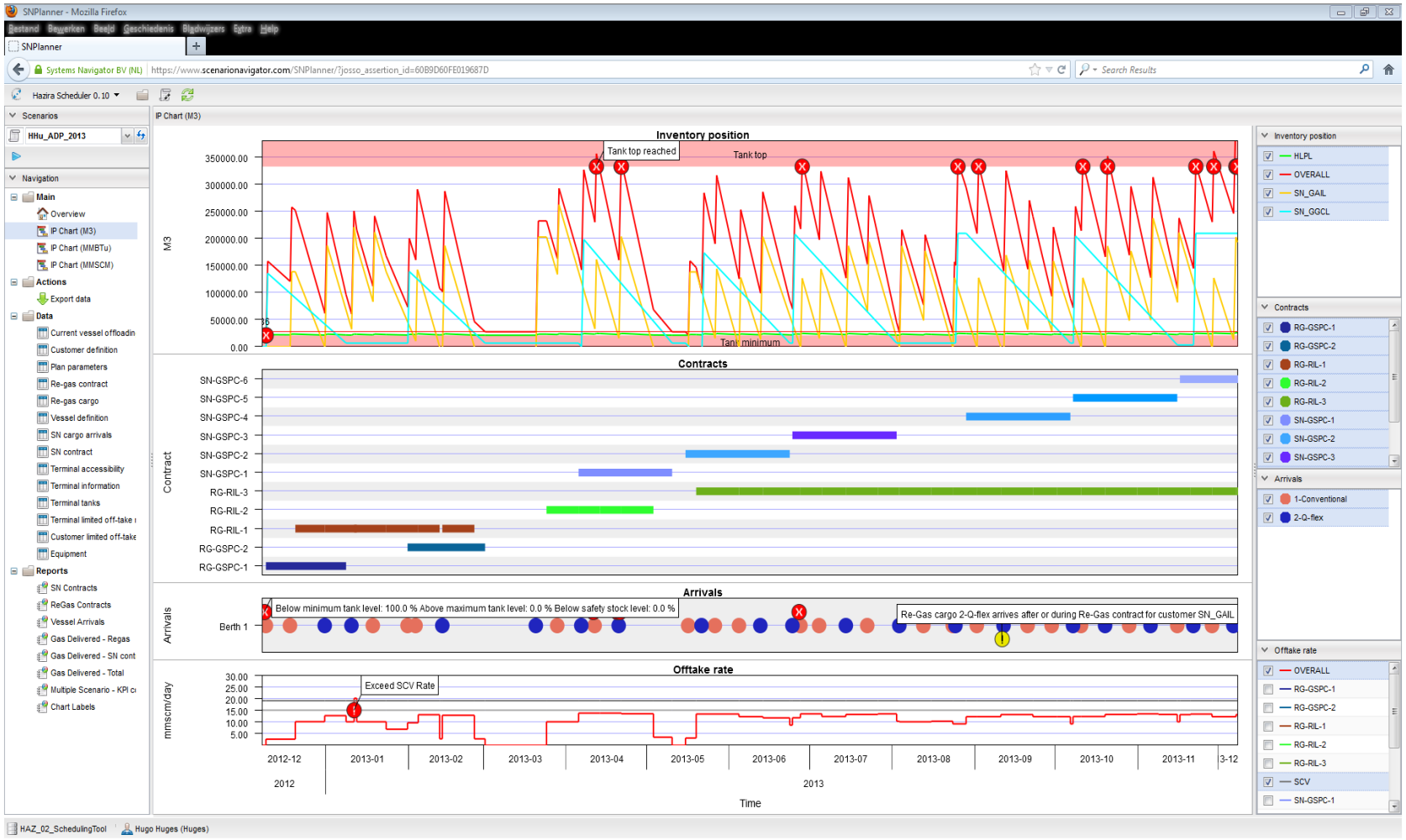
Deliverables

- Decision Support tool
- Dashboard display for defined key parameters
- Prepare multiple ADP(s) – Maximum Plan period 365 days
- Operational Planning – Maximum plan period 90 days
- Simulation on : Cargo volume and arrival windows on defined confidence level (%)
- Check for additional spot opportunities : one opportunity testing in one cycle / set of inputs
- Scenario testing with defined inputs : DCQ, supply period etc.
- Reports

Scheduling tool overview : Typical Dashboard



Scheduling tool : Operational module



Thank You