



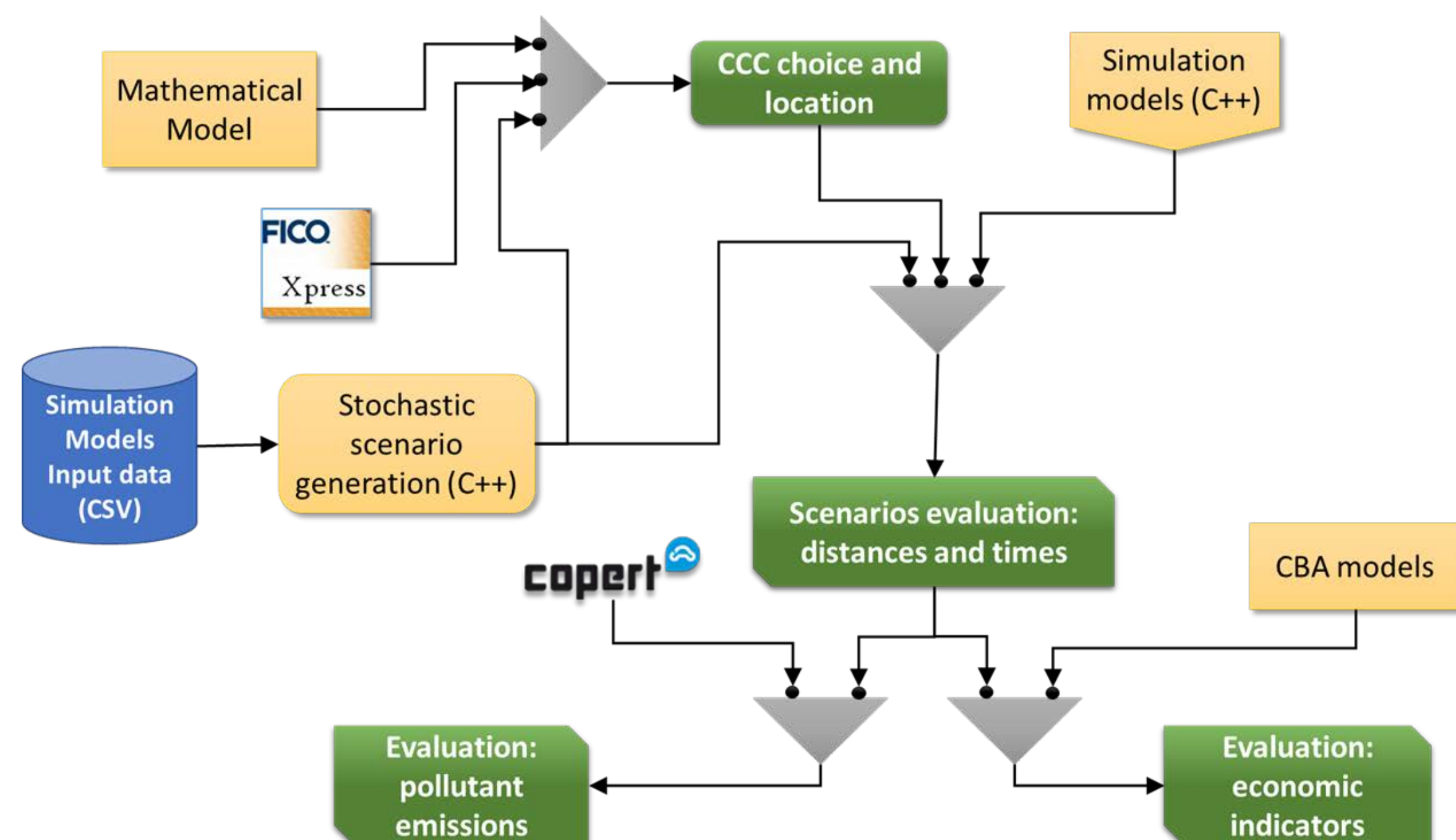
SIMULATION RESULTS

Identification of Optimal Solutions

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COMPUTATIONAL FRAMEWORK FOR SIMULATION



KPIs FOR THE IMPROVEMENT OF LOGISTIC AND TRANSPORT ACTIVITIES:



- Pollutant's emissions;
- Number of trips (deliveries);
- Number of Kilometres travelled;
- Time spent on the road;
- Loading factor.

THE USE OF A CONSTRUCTION CONSOLIDATION CENTRE :



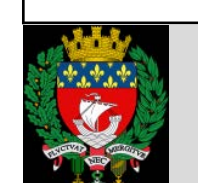
- ✓ Improves upon congestion and safety;
- ✓ Decreases the pollution emissions;
- ✓ Improves the on-time deliveries;
- ✓ If properly managed, it is economical sustainable without external interventions.

QUANTITATIVE EVALUATION OF THE SIMULATION RESULTS:



Luxembourg

Reduction of congestions considering daily number of freight vehicles both for direct and reverse logistics	-48%
Reduction of transport related pollutant emissions considering: CO2 emissions, NOx emissions, PM10 emissions	-33%, -41%, -30%
Vehicle use & route optimisation considering: - kilometres/day travelled by - small deliveries (< 4 pallets)	-42%, -100%
Maximise load factor considering the % increase load factor	+40%



Paris

Reduction of congestions considering daily number of freight vehicles both for direct and reverse logistics	-38%
Reduction of transport related pollutant emissions considering: CO2 emissions, NOx emissions, PM10 emissions	-23%, -35%, -13%
Vehicle use & route optimisation considering: - kilometres/day travelled by - small deliveries (< 4 pallets)	-24%, -100%
Maximise load factor considering the % increase load factor	+20%



Valencia

Reduction of congestions considering daily number of freight vehicles both for direct and reverse logistics	-48%
Reduction of transport related pollutant emissions considering: CO2 emissions, NOx emissions, PM10 emissions	-31%, -39%, -26%
Vehicle use & route optimisation considering: - kilometres/day travelled by - small deliveries (< 4 pallets)	-42%, -100%
Maximise load factor considering the % increase load factor	+40%



Verona

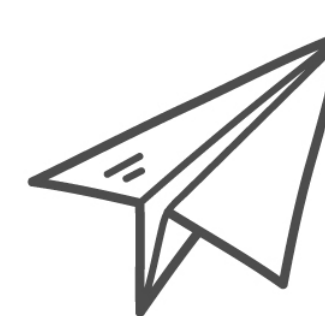
Reduction of congestions considering daily number of freight vehicles both for direct and reverse logistics	-54%
Reduction of transport related pollutant emissions considering: CO2 emissions, NOx emissions, PM10 emissions	-19%, -22%, -19%
Vehicle use & route optimisation considering: - kilometres/day travelled by - small deliveries (< 4 pallets)	-23%, -100%
Maximise load factor considering the % increase load factor	+232%

BARRIERS TOWARD A REAL IMPLEMENTATION:



- ❑ Business habits;
- ❑ Current supply chain management rules.

NEXT STEPS:



- Construction companies should better anticipate activities and increase their order sizes to generate financial savings;
- Agreements should be found between the construction companies and the Consolidation Centres Construction;
- Responsibility of goods should be transferred from the suppliers to the Consolidation Centres Construction operators.

OUTPUT:



- ✓ At www.success-urbanlogistics.eu, an interactive tool will be available to help in creating personalized simulations.

www.success-urbanlogistics.eu

