1Point2

Upstream the food plant:

helping managing land plots

A giant company in the food industry has chosen 1Point2 and ExtendSim to simulate its corn sowing and harvesting process, with the aim to obtain a tool for anticipating the load of the productizing plant during the harvest period, also integrating the selection of new land plots to cultivate.

⇒ **ISSUES:**

- Validate the drying capacity of the plant.
- Provide a schedule of harvests taking into account constraints of progression sequence.
- Help sizing the fleet of seeders and harvesters.
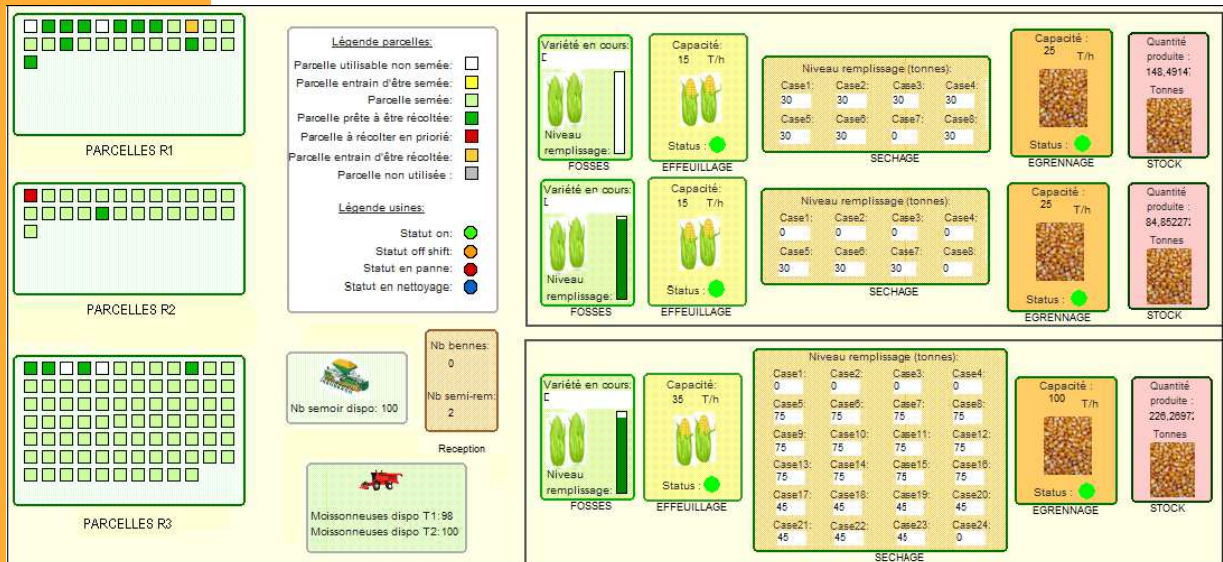
⇒ **SOLUTIONS:**

- A simulation accepting in input a variable number of land plots with their full characteristics, and multiples varieties of corn.
- A coded algorithm computing the best sequences for harvesting.

The various kinds of corn are sawn according to a schedule, in plots of land spread in different regions.

Depending on kind and sun exposure, the delay until the corn is ripe will vary.

Once ready, the land plots are harvested in a precise order, so as to reduce the changes of corn variety and thus limit the cleaning operations in the plant.

⇒ **ADVANTAGES:**

- Validation of new capacities for the food plant.
- Detailed tracing of crops, from sawing to drying.
- Supply of a provisional schedule for harvests, used to organize both the harvest in the plots and the work in the plant.

The whole process should take into account the number of available harvesters as well as the priorities in harvesting (varieties more fragile, or that have reached their maximum sun exposure) !
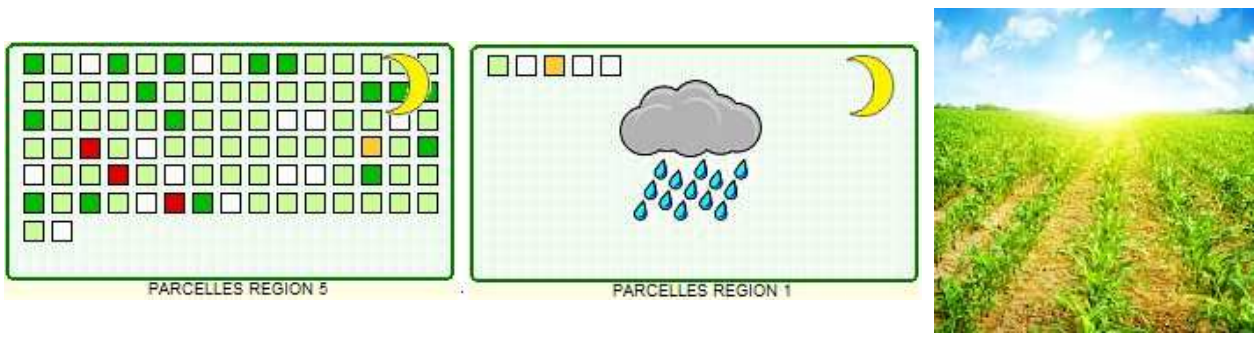
The harvested corn is transported to the plant using buckets or semi-trailers. There it is transformed following various steps: shelling, drying, husking then storing. A careful tracing starts with the filling of the drying compartments, since it mandatory to know each week which quantity of which kind of corn entered the drying units.

A material balance is realized at each step to verify the weight of finished goods, the moisture and the waste.

The simulation model also considers the opening hours, not forgetting failures and maintenance affecting the various equipments.

Flow simulation is one of the most powerful tools used to analyze complex systems:

- **Understanding** the system's dynamics: how long waits a land spot ready for harvest before being actually harvested? What is the cause of this delay?

- **Anticipating** the load of the food plant, and **verify** the investments will satisfy the needs. Simulation can avoid making small or big mistakes!

A database embedded in the model describes each land plot (a maximum 1200 plots), with information about its position, applying rainfall and day/night hours. 1Point2 built a sophisticated toolbox that, at any time during simulation, reports with a color code which plot is empty or sawn, which one should be harvested first or is being harvested. The animation gives a visual indication of availability or usage of resources (seeders, harvesters, trailers, buckets) .

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To know more about us, visit our site:
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We support industry managers with simulation to assist their decision-making process.
Trained in flow simulation in the United States and France, the 1Point2 team has been providing services, quality software, training and methodological assistance since 1987.
1Point2 is the exclusive distributor of ExtendSim in France, Belgium, Switzerland, Italy, Spain, Portugal and Greece.

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