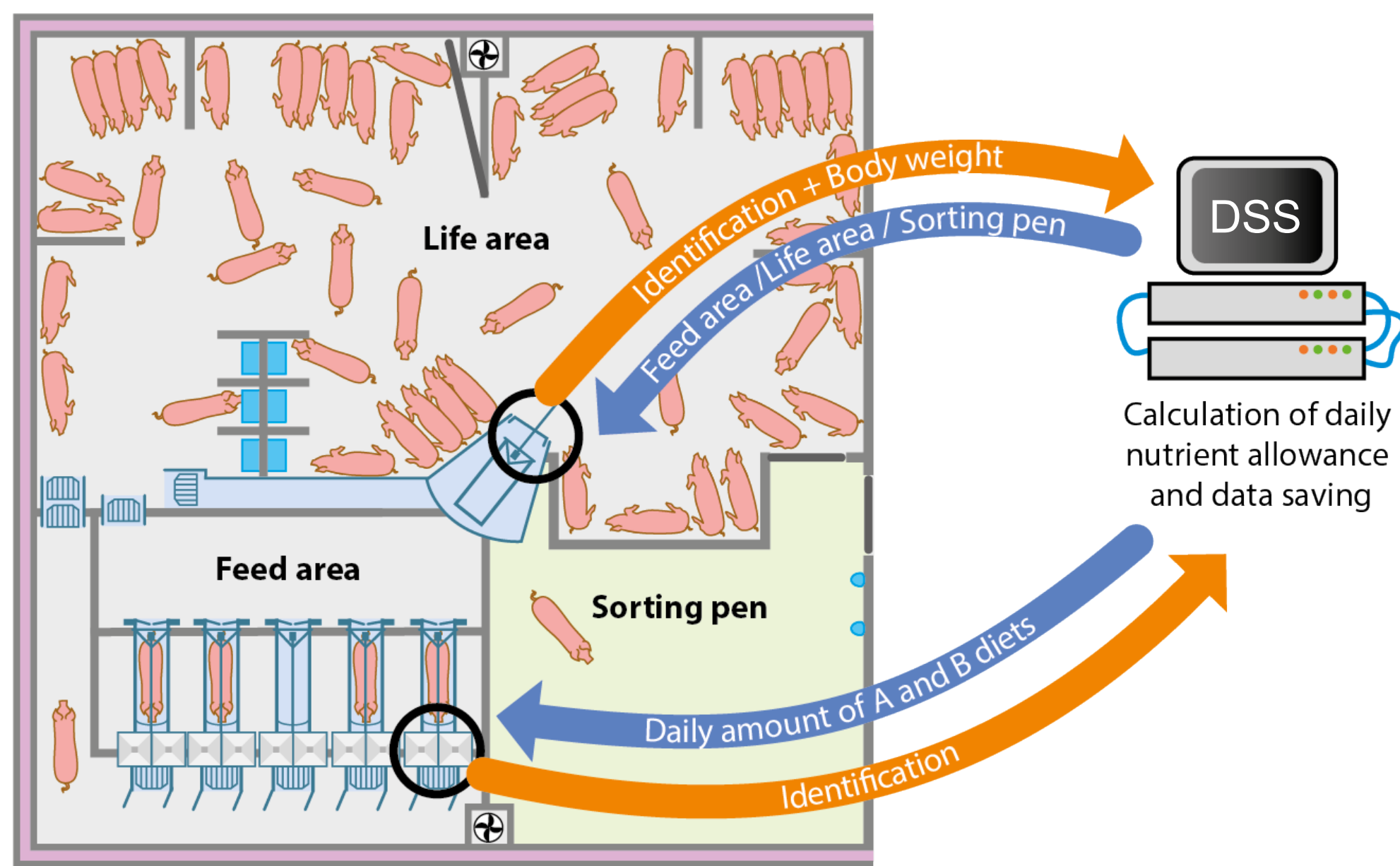# Precision feeding of restricted-fed pigs
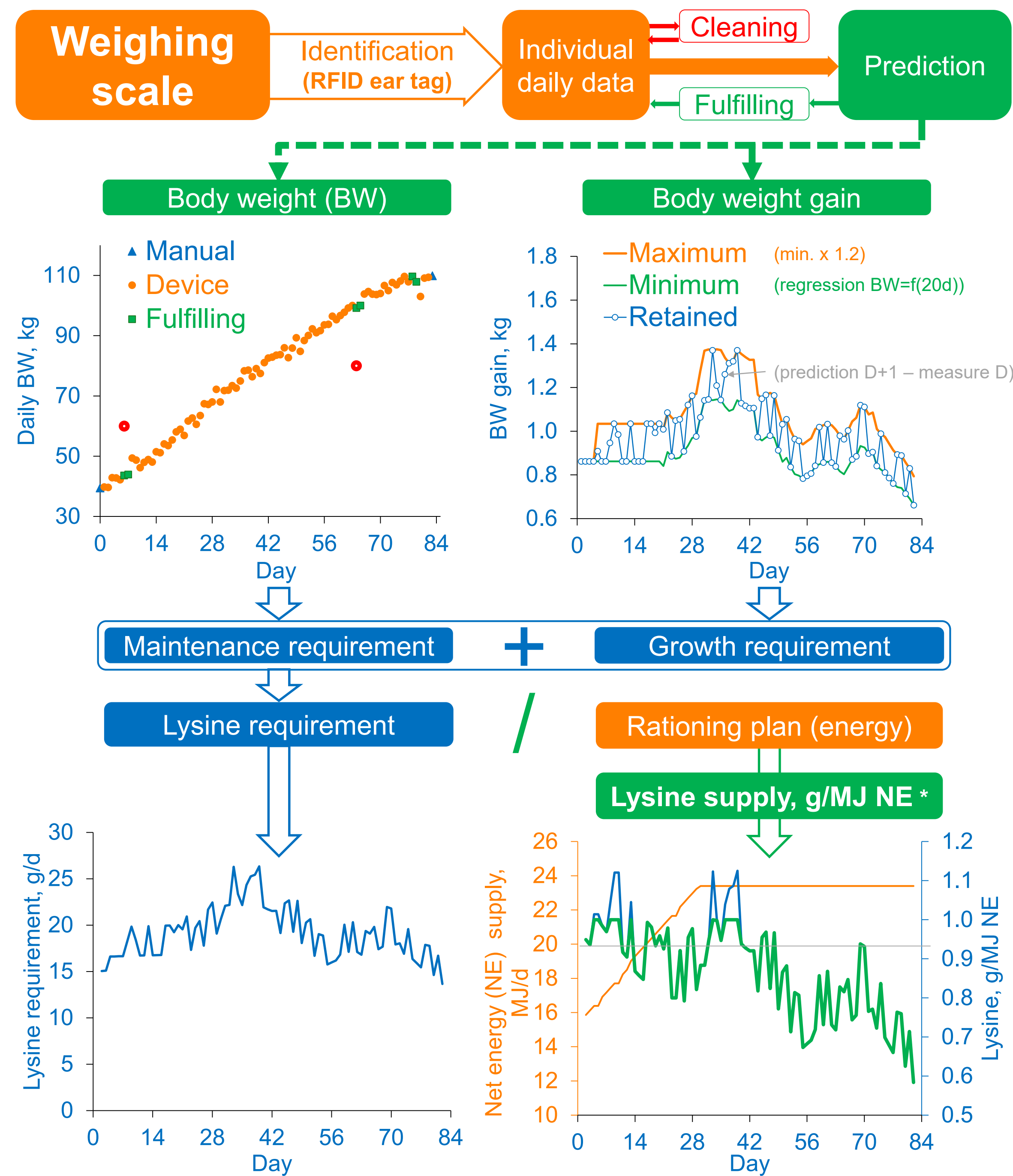
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INTRODUCTION

In France, more than 2/3 of fattening pigs are restrictively fed in order to improve the feed efficiency and carcass leanness in a context of incentive carcass payment grid to have lean pigs.

The application of the decision support system (DSS) developed in the Feed-a-Gene project was tested in IFIP experimental farm (Romillé, 35, France) in a fattening room designed to implement precision feeding in restricted-feeding conditions. The DSS was integrated to a pre-industrial prototype of precision feeder.

Integration of individual data and performance forecast

In blue: supply fits the requirements, in green: supply is limited by the composition of the available diets

Adaptation of diet quality to individual requirements

Precision feeder

Pig 180600

Example	Day 52	
Lysine requirement	16.7 g	
Net energy supply	23.4 MJ/d	2.40 kg*
Lysine content	0.71 g/MJ NE	%A + %B

A: 1.0 g/MJ — 42% — 1.0 kg/d
B: 0.5 g/MJ — 58% — 1.4 kg/d

Diets A and B formulated to 9.75 MJ NE/kg, and to 1.0 and 0.5 g digestible lysine/MJ NE, respectively.

CONCLUSION

The design of the whole fattening room has to be revised to perform precision feeding in restricted-feeding conditions. It is necessary to use precision feeders that avoid stealing of feed among pigs and to create a sorting pen and sleeping area, as it is done for group-housed gestating sows.

Precision of nutrient delivery was evaluated from the proportion of diets mixed each day on an individually basis in successive tests. From the beginning, it appeared that the precision feeders delivered a blend of the two diets in proportions that met the expectations with a high precision.

System refinement was carried out during the first rounds. It focused first on solutions required to make the DSS able to deal with day-to-day variability in animal performance, especially on how to assess growth rate from daily weighing. Then, refinement focused also on impaired forecasting procedures due to missing data (after removal of outliers or unexpected power failure or electronic problems). Communication procedures implemented between modules of the DSS have been updated accordingly.

Results on nutrient efficiency obtained in demonstration trials indicated that growth performance and carcass characteristics were similar with precision feeding and with a standard 2-phase feeding strategy. But with 5% less nitrogen intake and 6% less nitrogen output compared to the 2-phase strategy, a reduced use of protein rich sources and a decrease in environmental impact of pig production was achieved with precision feeding.

To know more about the results

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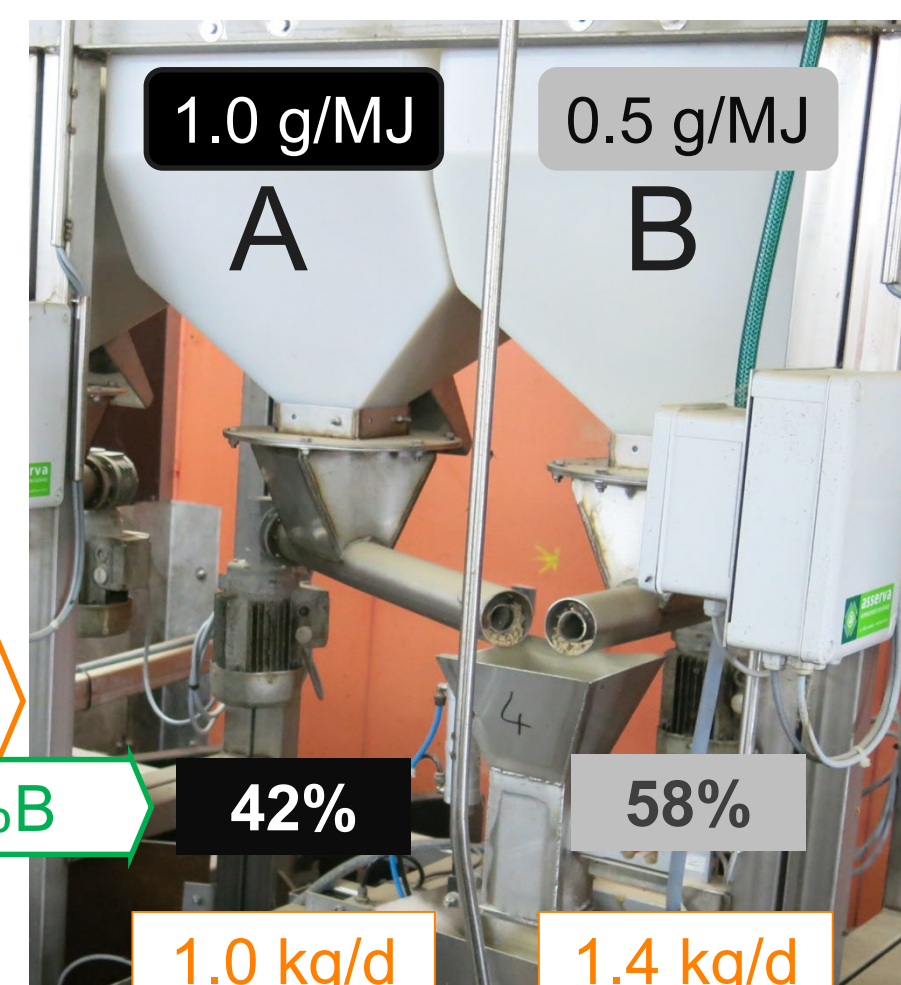
Quiniou N., Brossard L., Marcon M., 2018. Precision feeding with a decision support tool dealing with daily and individual pigs' body weight. In: Proc. of the 69th Annual Meeting of the EAAP, Dubrovnik, Croatie, session 54.

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