In this last video of the week and of the course, we have finished our study of **waiting systems** and of multi-server systems.

- We have deduced the **Erlang C** formula, which gives the **waiting probability** of the system and is given by the following formula

$$E_C(\rho, C) = \frac{\frac{\rho^C}{C!} \frac{C}{C-\rho}}{\sum_{k=0}^{C} \frac{\rho^k}{k!} + \frac{\rho^C}{C!} \frac{\rho}{C-\rho}}$$

- We have deduced other performance metrics : **average waiting time**, average sojourn time, **average number of clients** in the system.

- We went through an example which showed that for equal arrival and service parameters, we better have one single queue and multiple servers, rather than several servers each with their own queue. Indeed, the scheme with one single queue and multiple servers leads to a smaller waiting time than having one queue per server.