



Bornes de Latence dans les Réseaux Temps-Réel

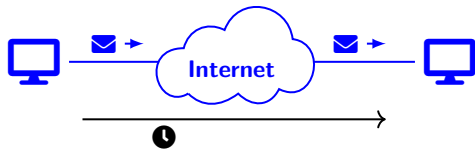
Présentation visite École des Mines

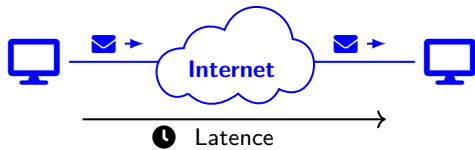
Ludovic Thomas

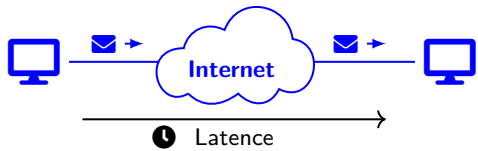
`ludovic.thomas@loria.fr`



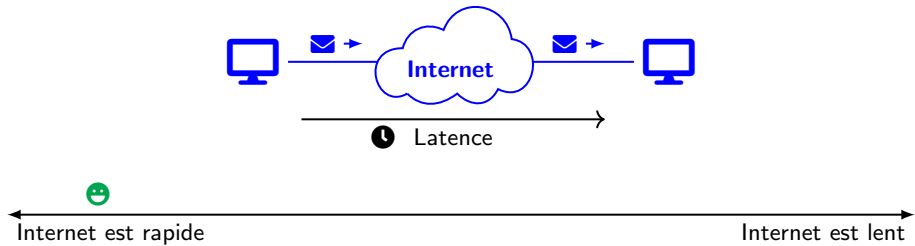


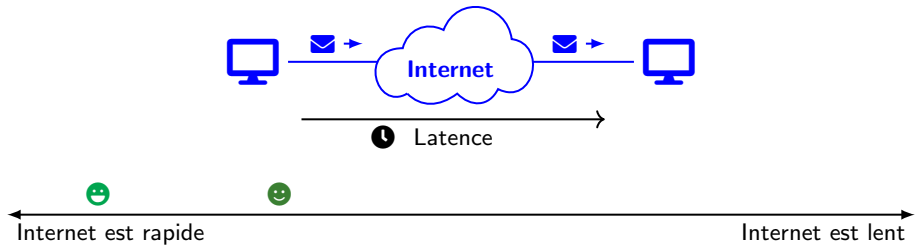


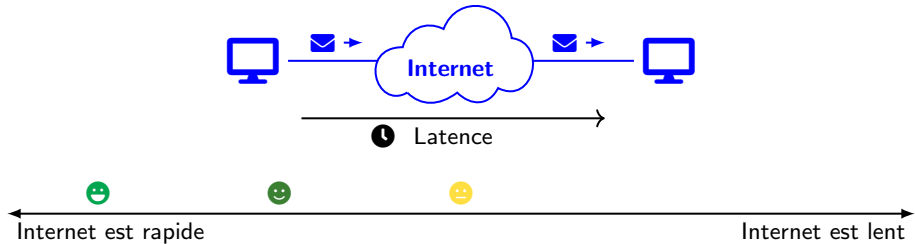


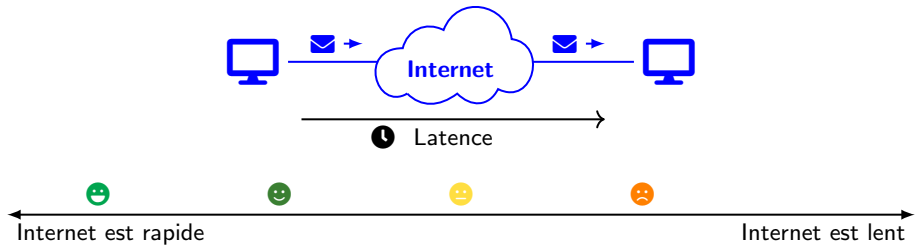


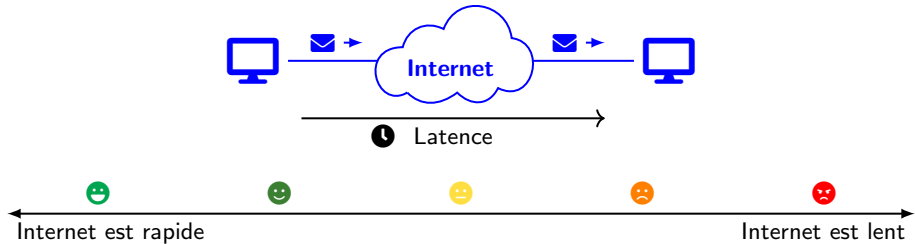
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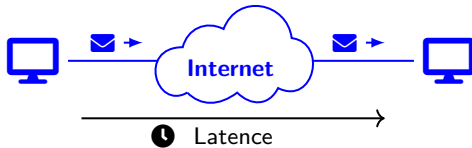


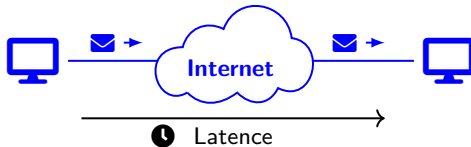


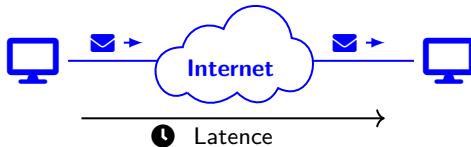


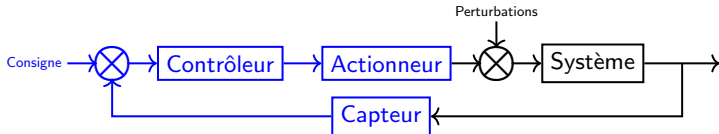
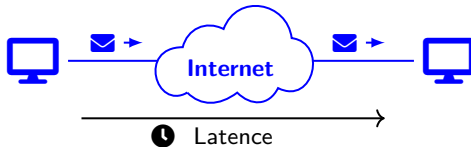


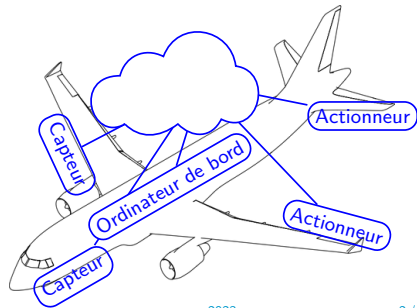
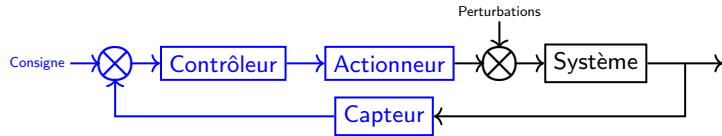
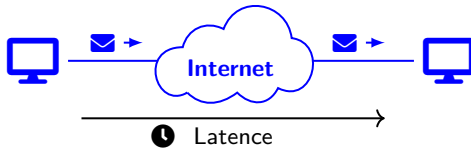




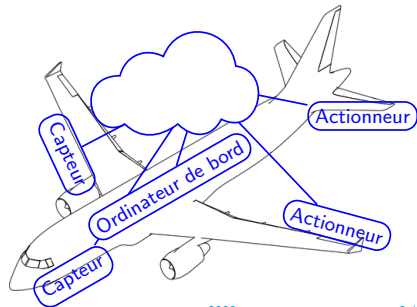
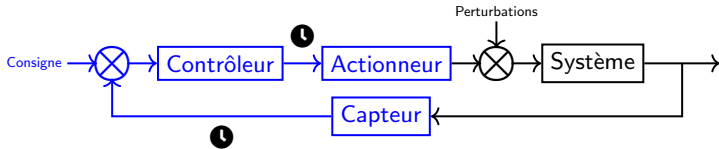
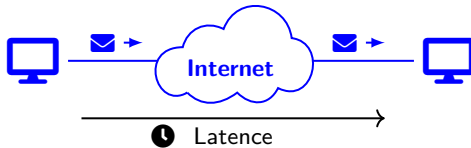




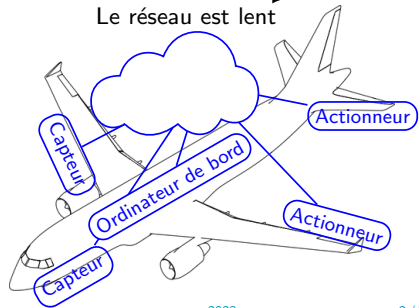
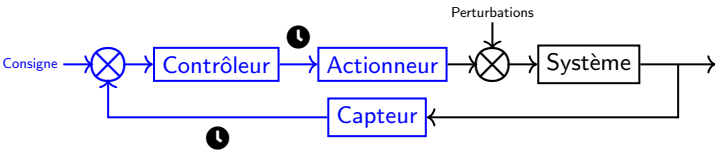
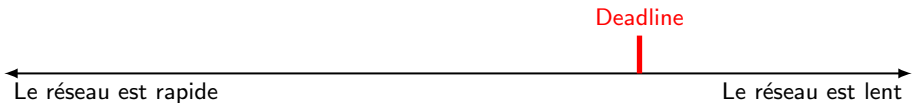
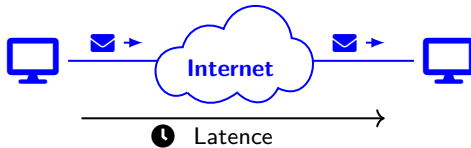




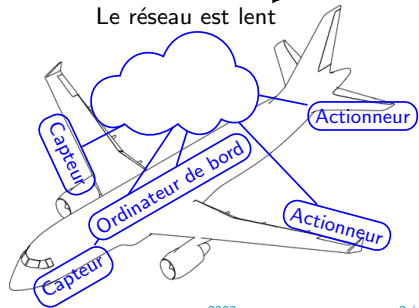
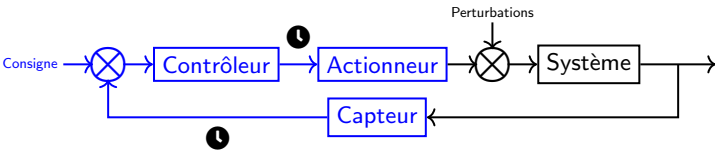
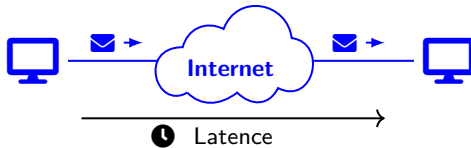
Systèmes cyber-physiques (CPS)



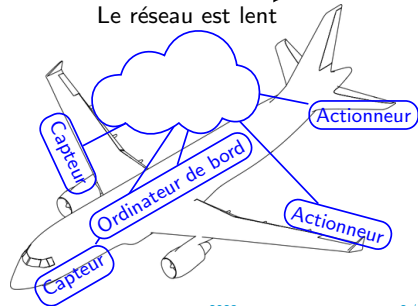
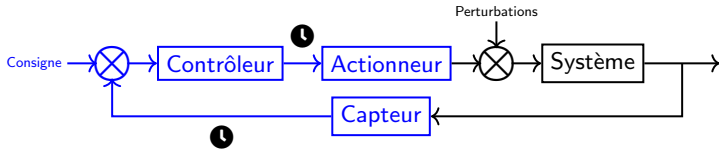
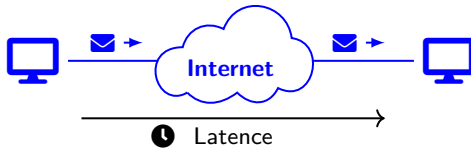
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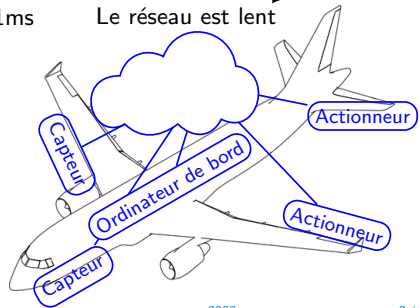
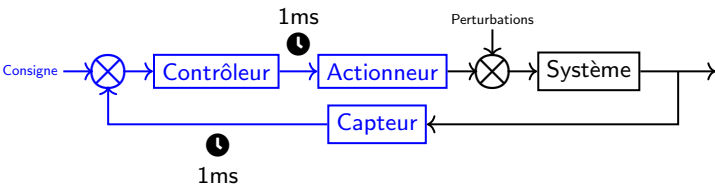
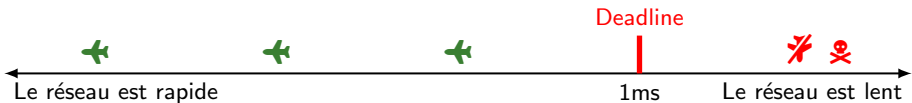
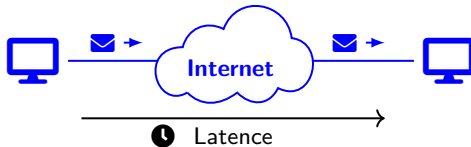
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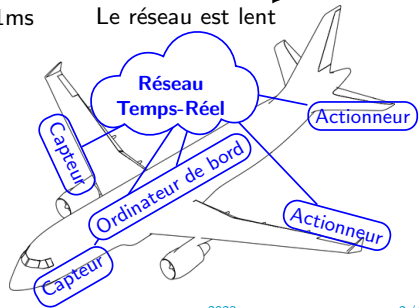
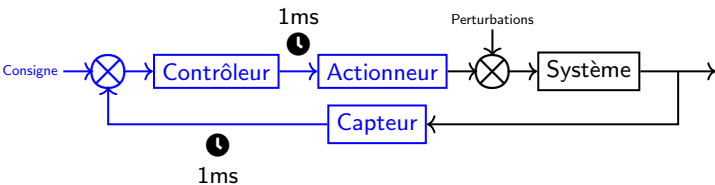
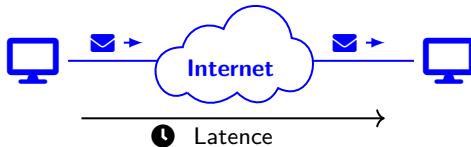
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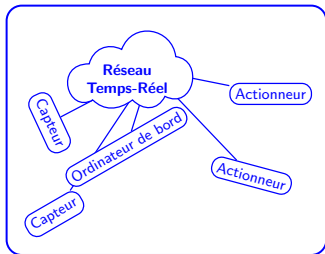
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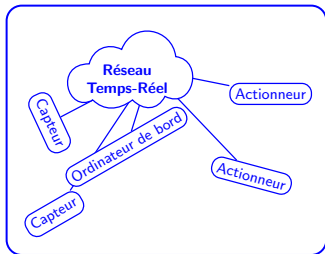
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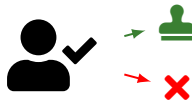
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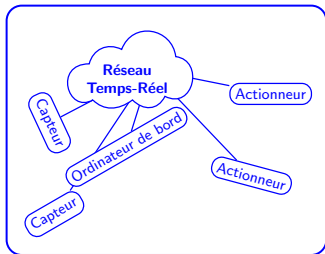
Constructeur
(ex: Airbus)



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Autorité de certification
(ex: European Aviation Safety Agency)

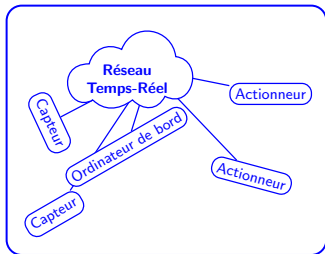


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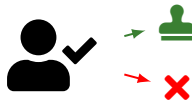


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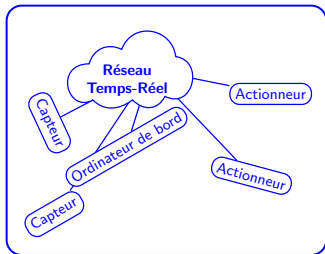


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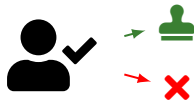


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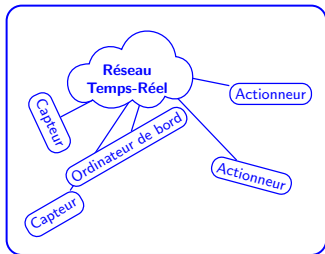


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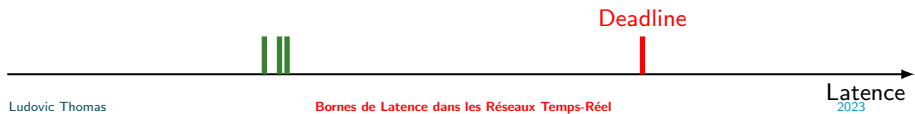


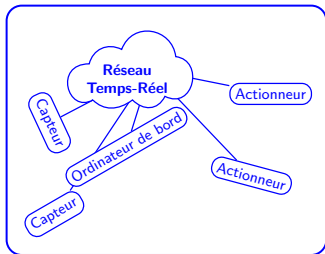


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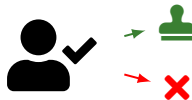


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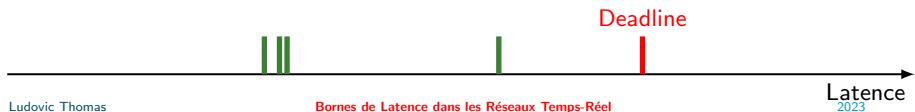


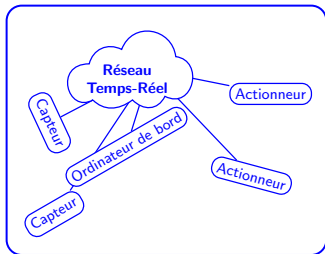


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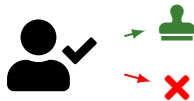


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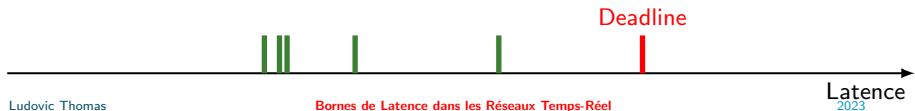


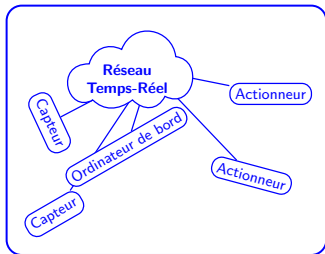


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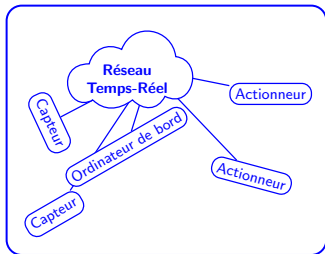


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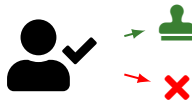


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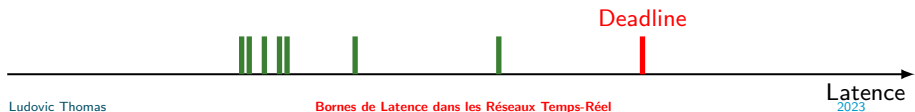


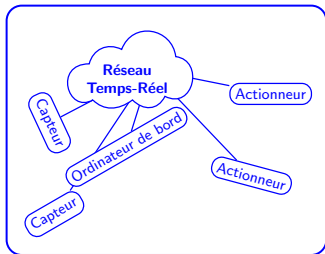


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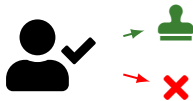


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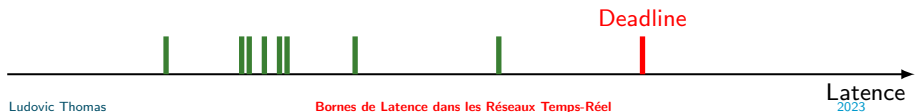


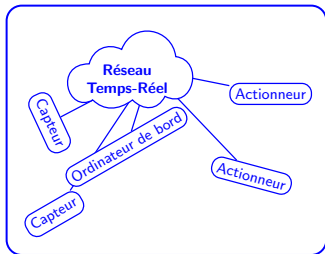


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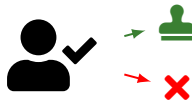


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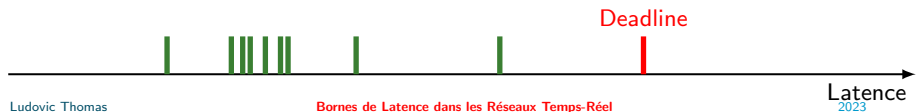


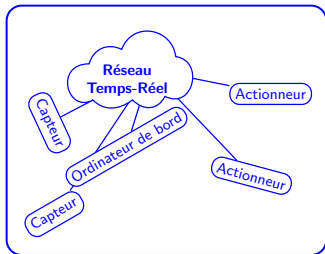


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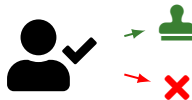


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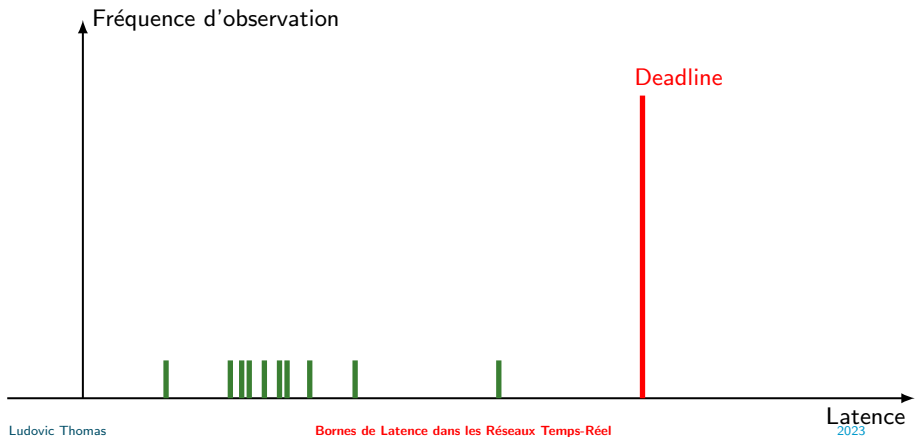


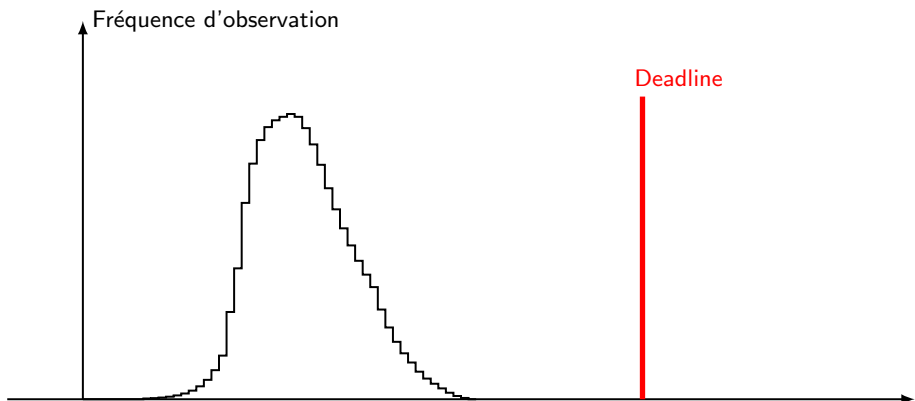
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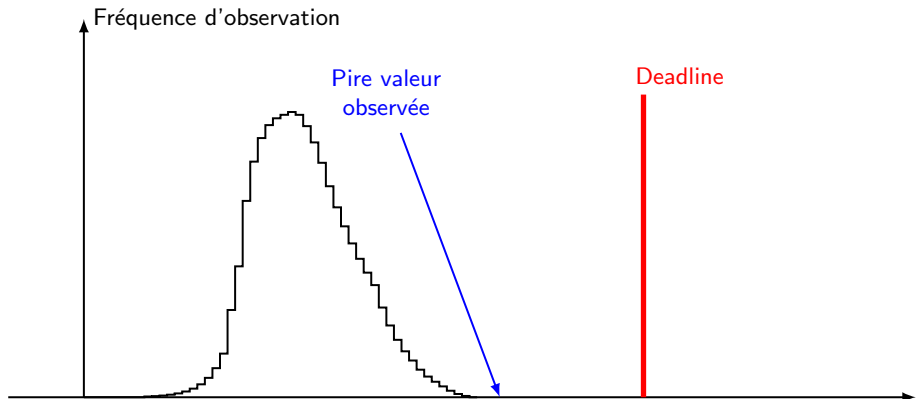


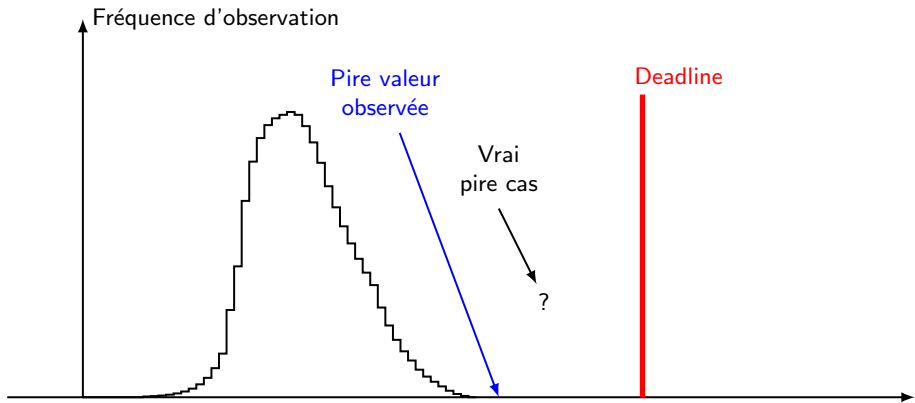
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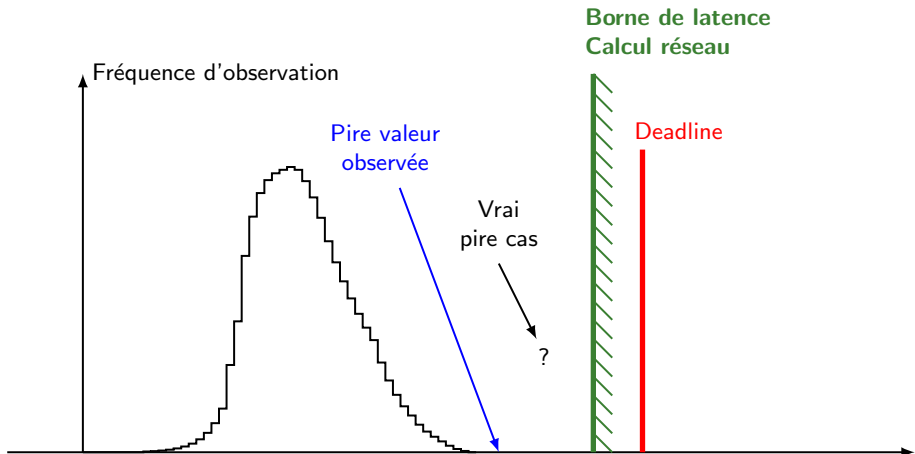












Le Calcul Réseau (*Network Calculus*)

Algèbre "classique"

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Algèbre "classique"

$$4 + 2 = 6$$

$$5 \times 3 = 15$$

Le Calcul Réseau (*Network Calculus*)

Algèbre "classique"	Algèbre min-plus
$4 + 2 = 6$	$4 + 2 = 2$
$5 \times 3 = 15$	$5 \times 3 = 8$

Le Calcul Réseau (*Network Calculus*)

Algèbre "classique" (\mathbb{R} , +, \times)	Algèbre min-plus (\mathbb{R}^+ , min , +)
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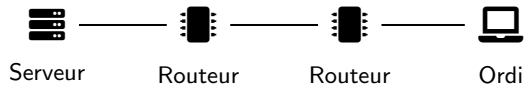
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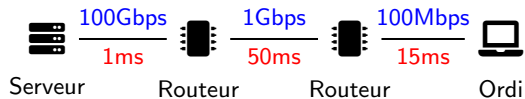
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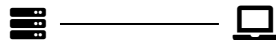
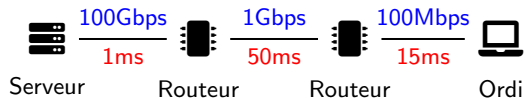
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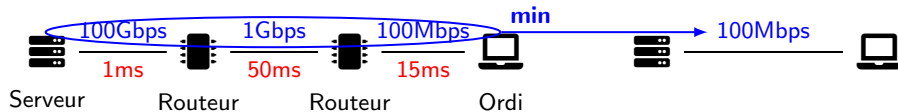
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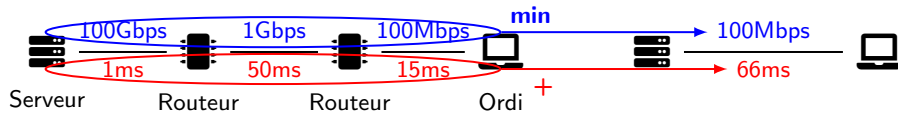
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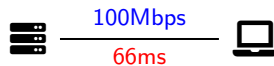
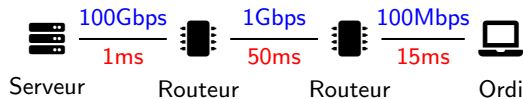
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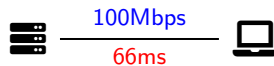
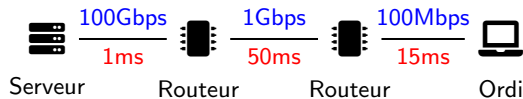
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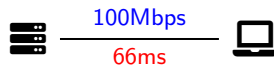
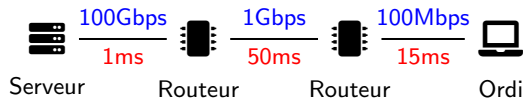
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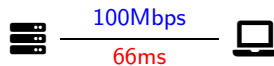
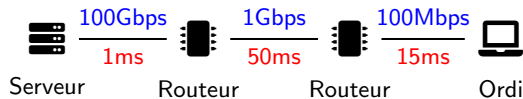
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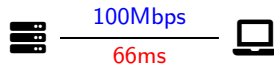
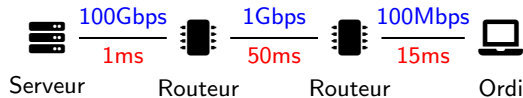
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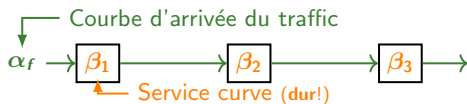
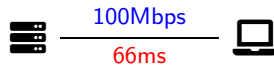
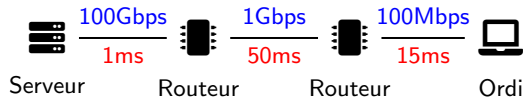
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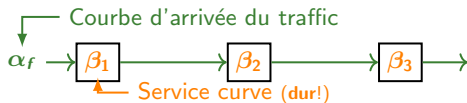
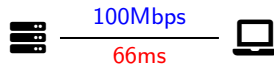
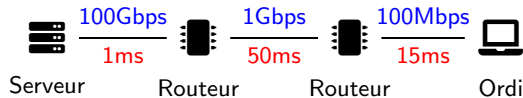
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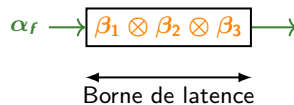
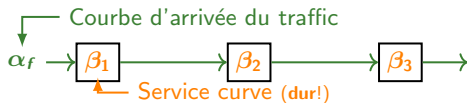
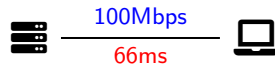
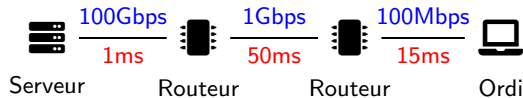
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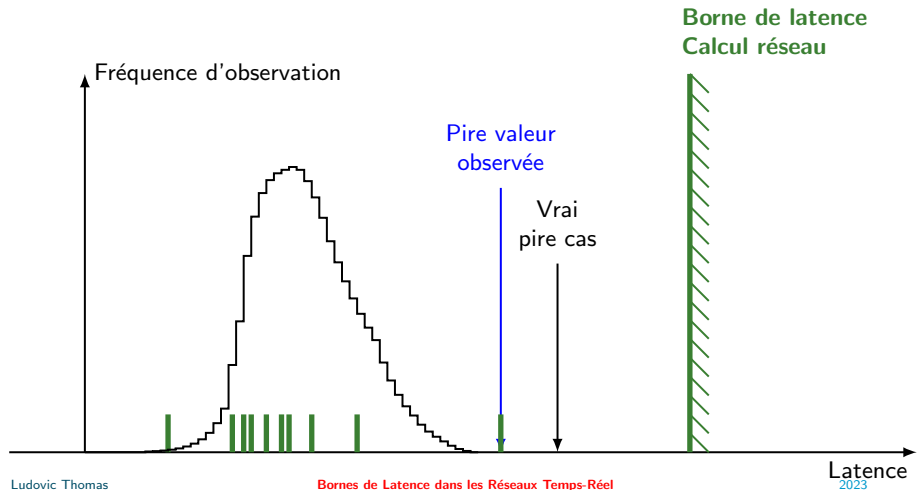


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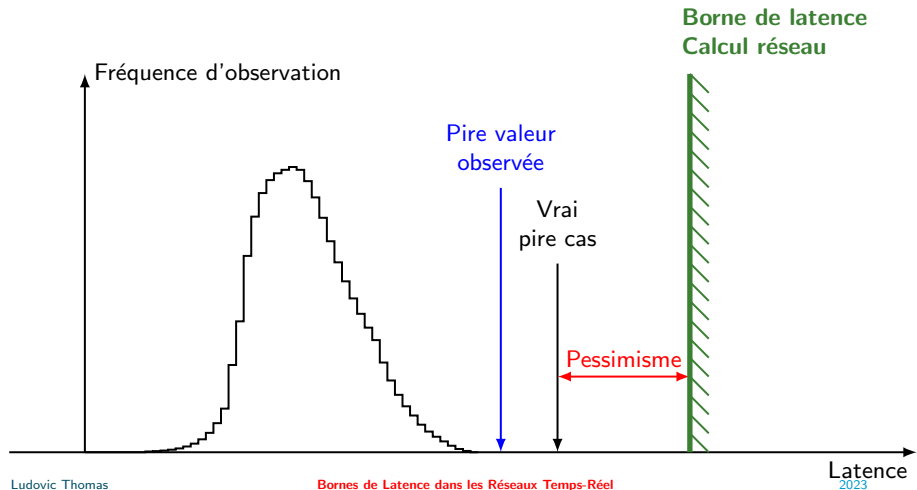
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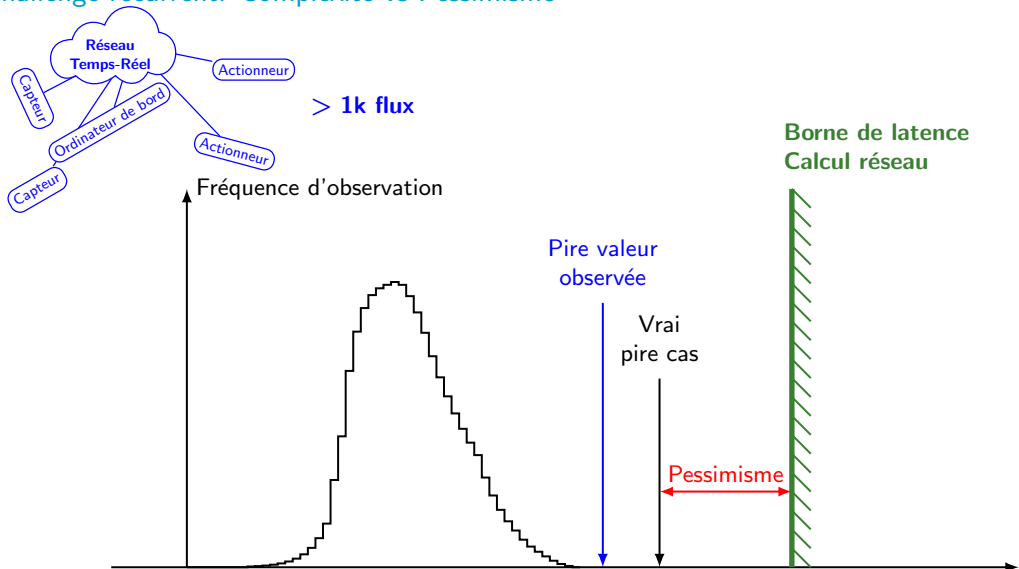
Challenge récurrent: Complexité vs Pessimisme



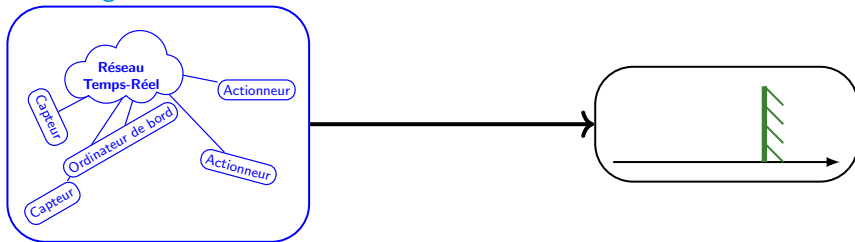
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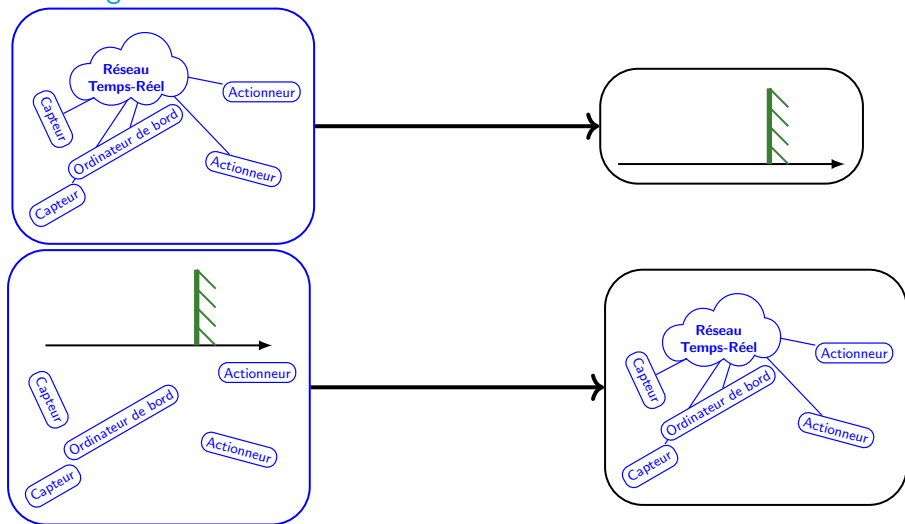
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Les Challenges à Venir



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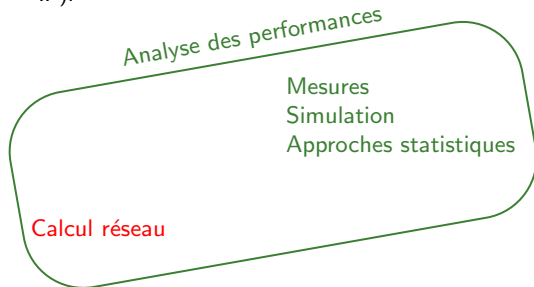
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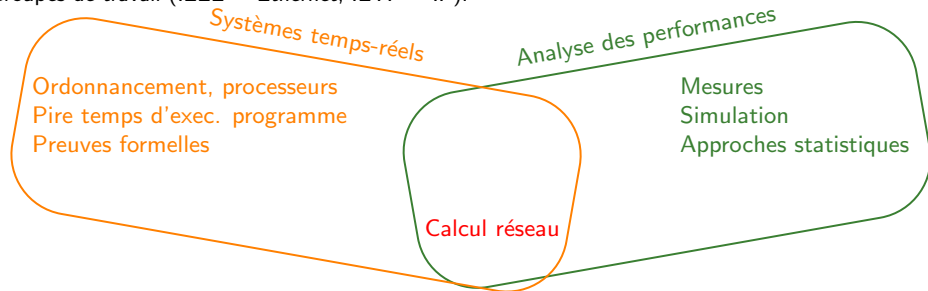
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