

# Global Privacy

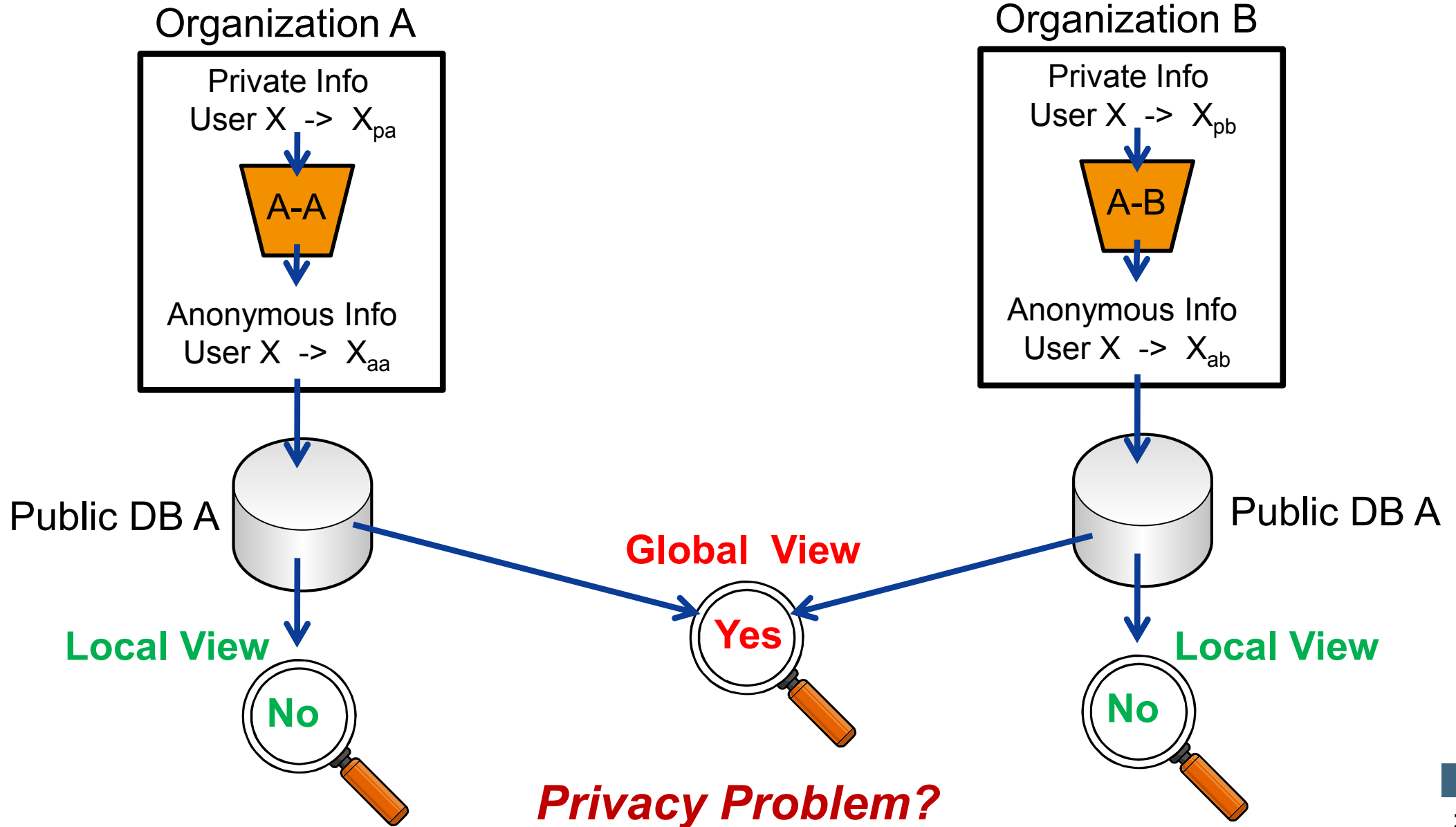
## → Idea

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# Global Privacy

## → Background (1/2)



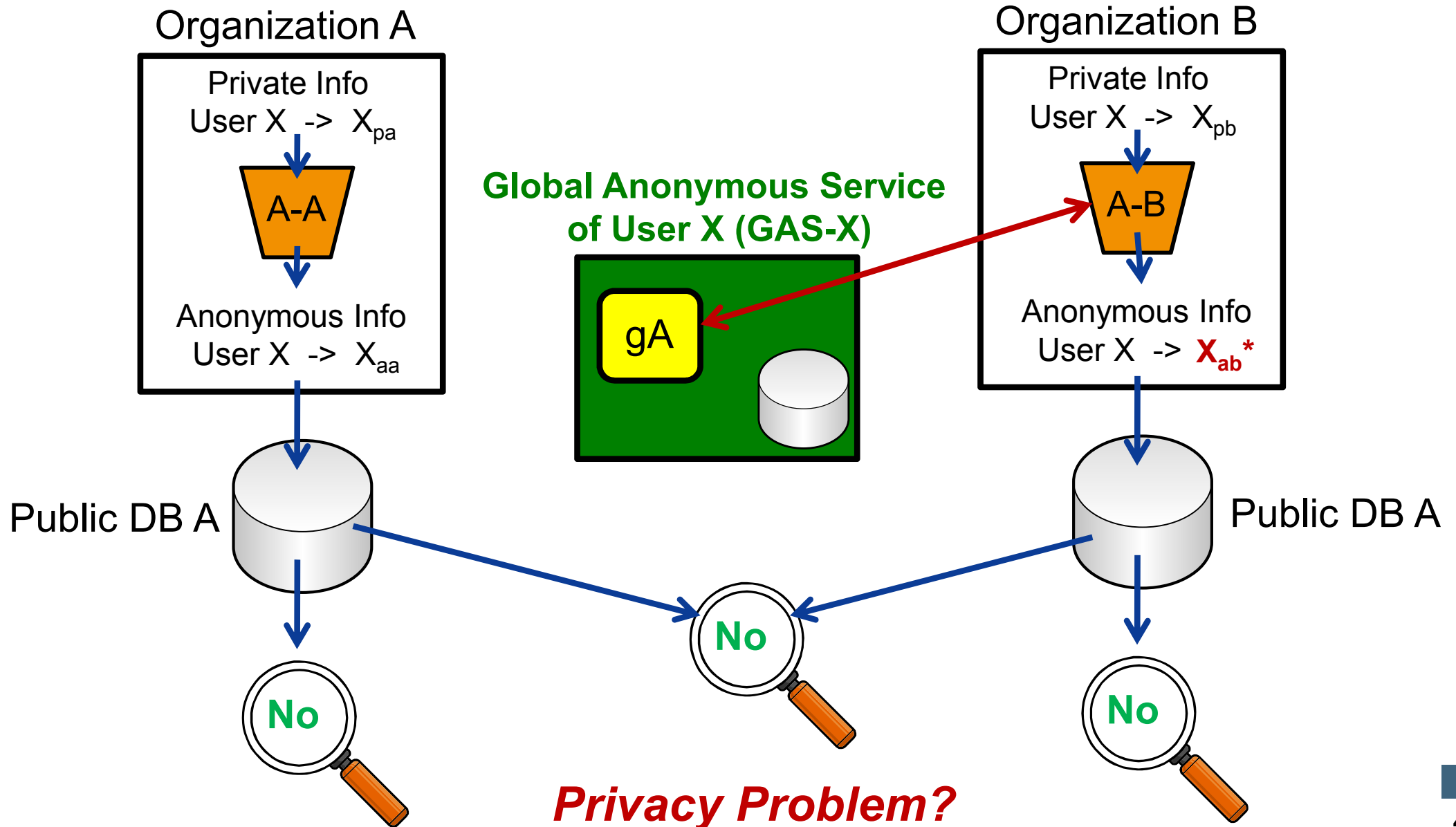
# Global Privacy

## → Background (1/2)

- Organization “A” has private information from user “X “  
(Private Info User X  $\rightarrow$   $X_{pa}$ )
- Organization “A” has an anonymous mechanism “A-A” to generate anonymous information from “A” (Anonymous Info User X  $\rightarrow$   $X_{aa}$ )
- This information is published in a public data base (Public DB A)
- It is not possible to get  $X_{pa}$  from  $X_{aa}$
  
- Organization “B” has private information from user “X “  
(Private Info User X  $\rightarrow$   $X_{pb}$ )  $X_{pb}$  could be unequal in some part  $X_{pa}$ , but they should be at least correlated
- Organization “B” has an anonymous mechanism “A-B” to generate anonymous information from “B” (Anonymous Info User X  $\rightarrow$   $X_{ab}$ )
- This information is published in a public data base (Public DB B)
- It is not possible to get  $X_{pb}$  from  $X_{ab}$
  
- **Problem:** If someone has access to both public data bases, then it will be possible to get a part of the private information ( $X_{pa}$ ,  $X_{pb}$ ) from ( $X_{aa}$ ,  $X_{ab}$ )

# Global Privacy

## → Idea Global "Anonymization" (1/2)



# Global Privacy

## → Idea Global “Anonymization” (2/2)

- We create a **Global Anonymous Service (GAS)** for users!
- If organization “A” has to generate  $X_{aa}$ , then “A” will ask the GAS-X
- The GAS-A gave the answer OK, because it was the first request.
- If organization “B” has to generate  $X_{ab}$ , then “B” will ask the GAS-X
- The GAS-X will give the answer OK, if there is no privacy problem.
- If there is a privacy problem, then GAS-X and A-B will start to negotiate about chances of  $X_{ab}$  (parameter of A-B)
- If they both find a solution, then “B” will publish  $X_{ab}^*$
- ...

# Global Privacy

## → Global Anonymous Service (GAS)

### ■ Example GAS-X:

- All information is stored in the DB of the GAS-X:

$X_{pa}, X_{aa}$   
 $X_{pb}, X_{ab}$

...

(for every public data base)

- We need a Global Anonymous Mechanism (gA) which can prove the global anonymous of all public data and find solutions.
- ...

# Global Privacy

## → Question

- Does exist any model of anonymous mechanism “A-Organization” where we can define parameters?
  - k-anonymity the anonymous model?
- Can we find an easy example which makes the problem and the solution clear?
- Which kind of information do we need in the GAS DB?
  - Size of the information
  - What additional info do we need?
  - ...
- Where should the service “GAS-User“ be located?
  - at the user side of the user
  - at a trusted third party  
(every user can decide which one he would like to use)
  - government service
  - ...

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## → Idea

Thank you for your attention!  
Questions?

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