

# The FAP

September 2009



# Contents

## > **FAP purpose**

> FAP principle

> How does it works?

# FAP purpose

- > To provide persistent experience of Broadband Internet access to Regular Users, assuring that a convenient average statistical performance is reached by all accounts,
- > To control resource sharing among the members of a heterogeneous and variable population of Users,
- > To assure that all Users are assigned the same resources,
- > To avoid that abnormal use of resources by few users impairs service performance for the majority of users.



# With abusers, resources are extremely **tooway**<sup>™</sup> **unequally distributed...**

The new way to broadband

Typical regular user



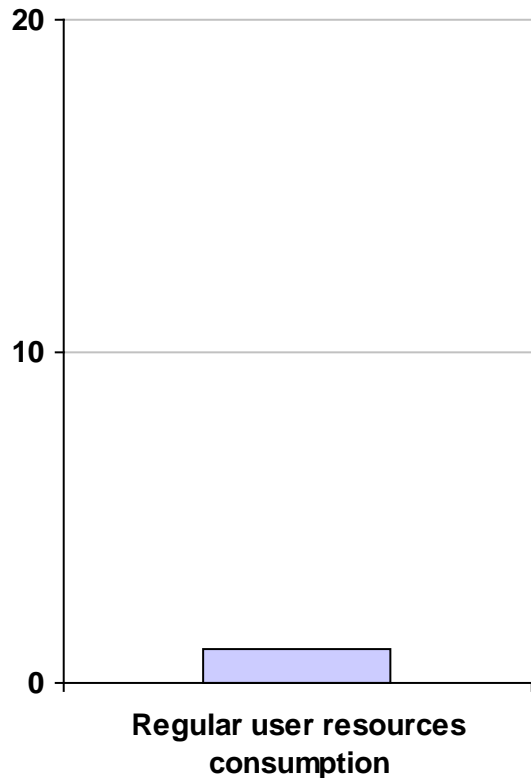
Typical abuser



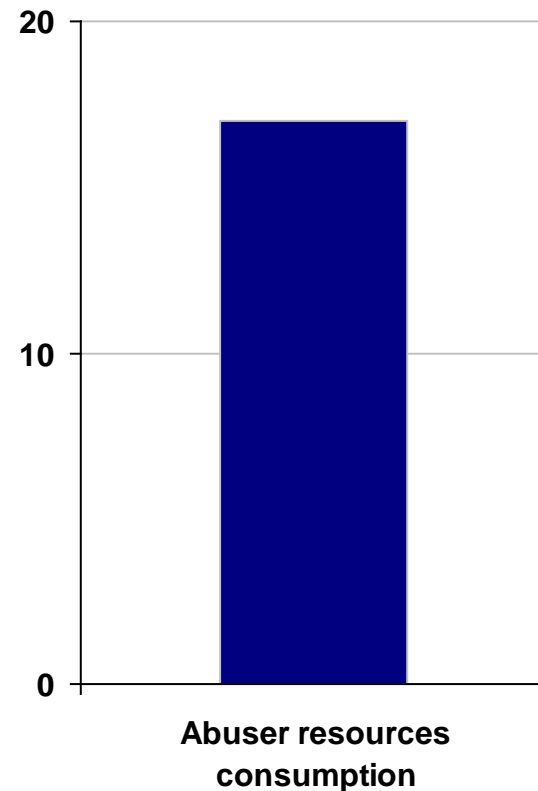
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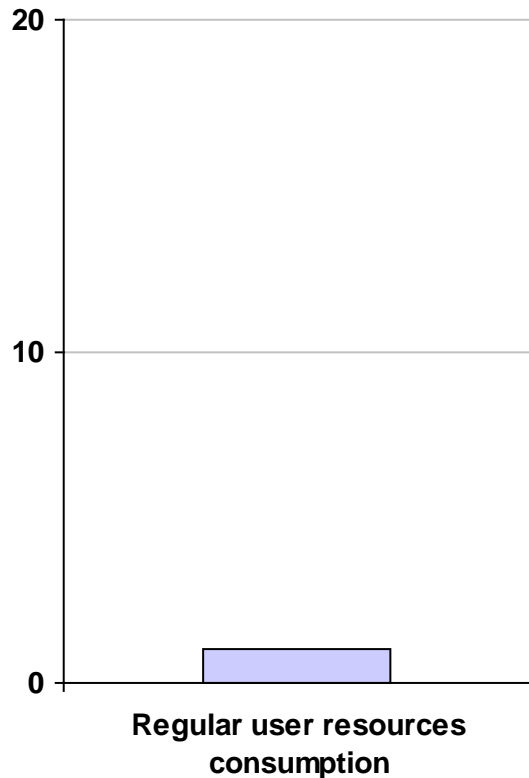


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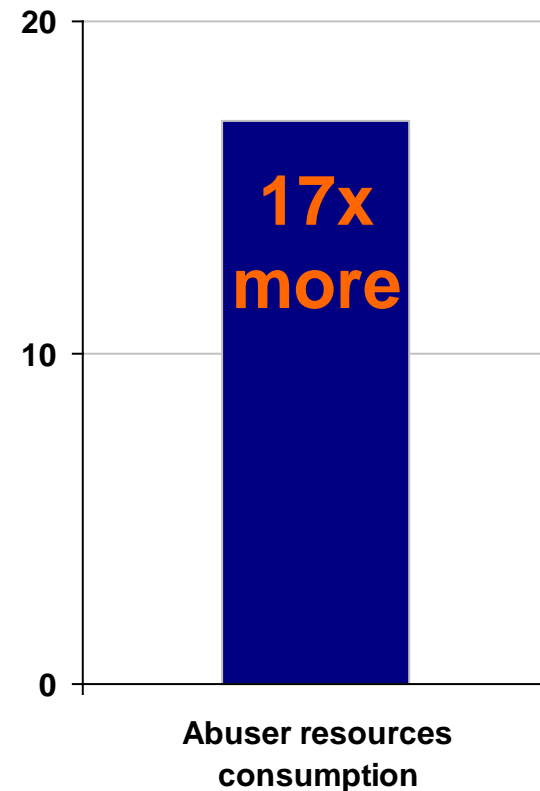


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Typical regular user



Typical abuser

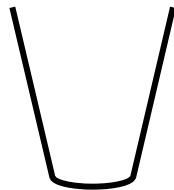


# Then, how do they use resources?

Typical regular user

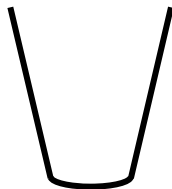


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Typical abuser







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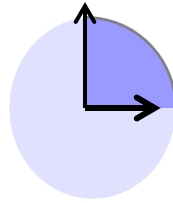
> FAP purpose

> **FAP principle**

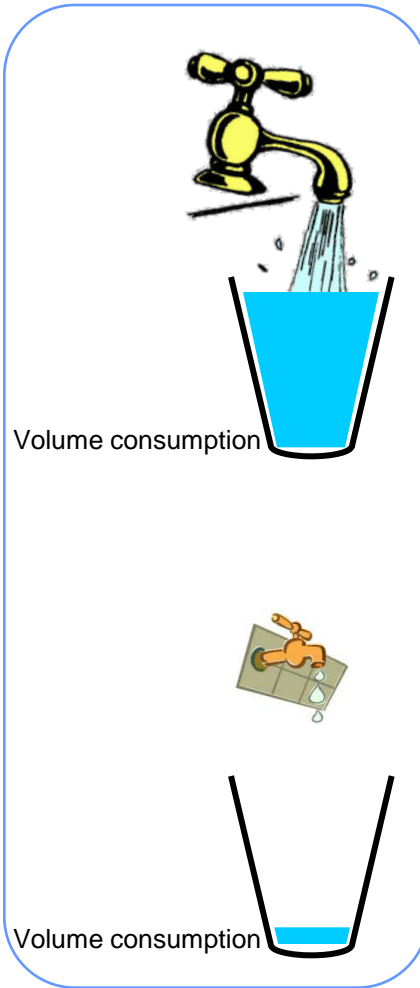
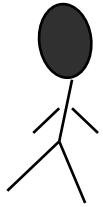
> How does it works?

# Without FAP, what happens?

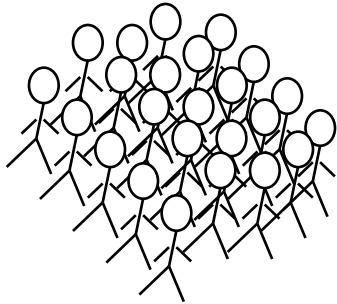
During first week



abUser

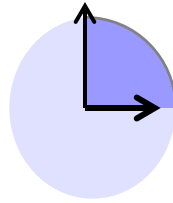


Regular Users

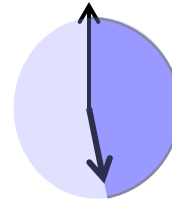


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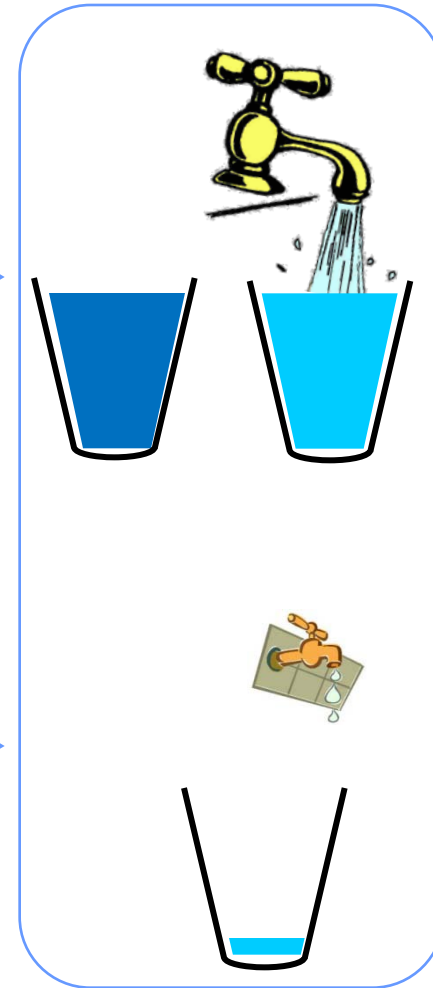
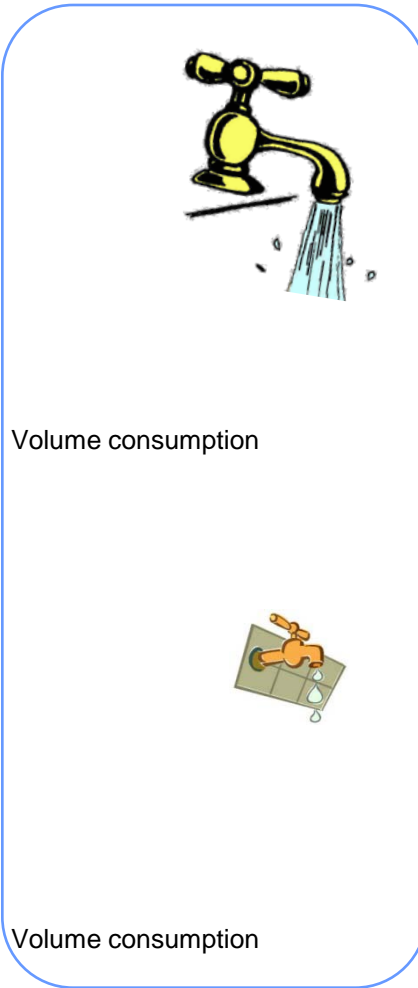
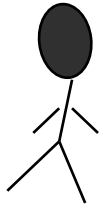
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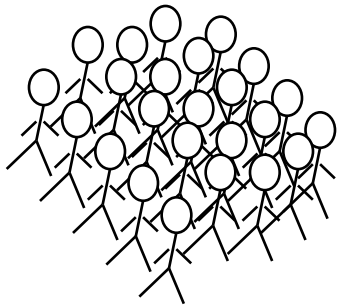
Then, up to the second week



abUser

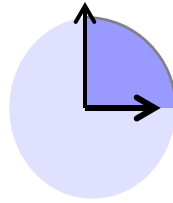


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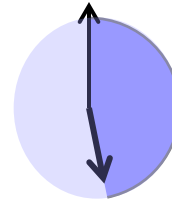


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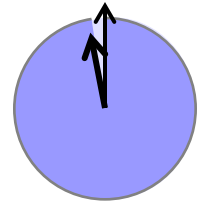
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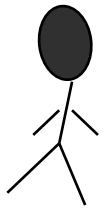
Then, up to the second week



After four weeks

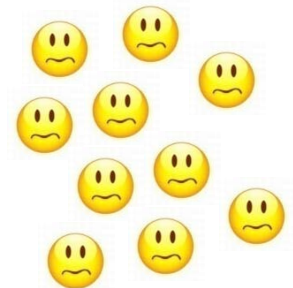
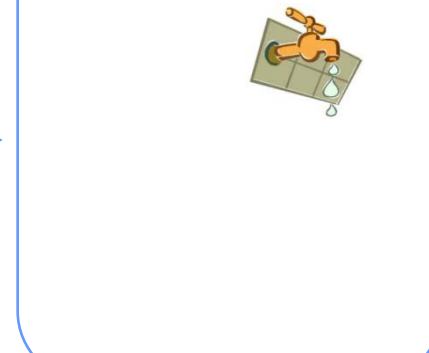
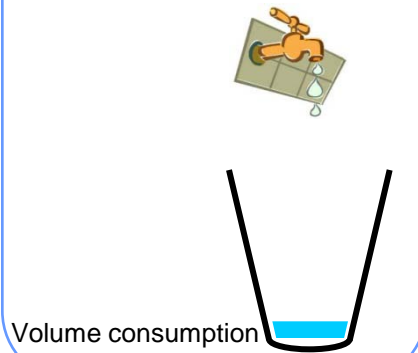
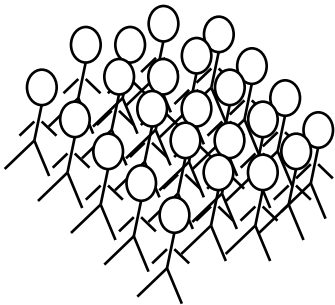


abUser



Has excessively enjoyed Tooway  
**What a selfish user...**

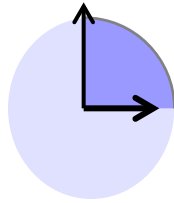
Regular Users



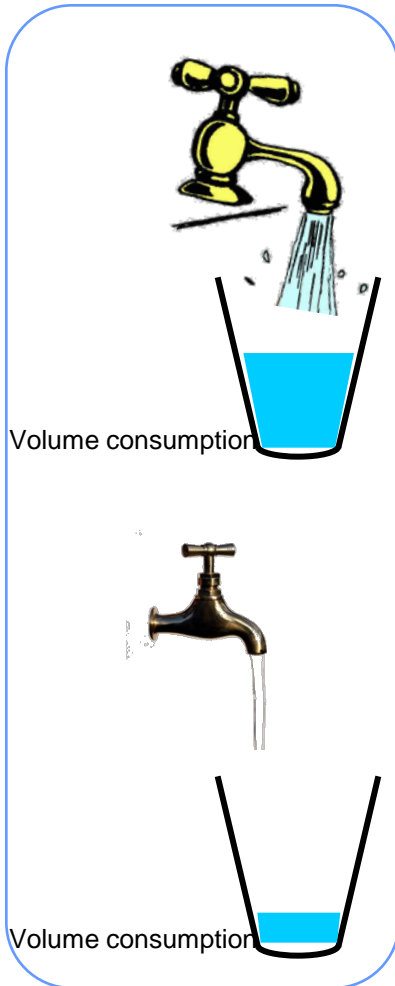
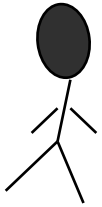
**Could not fully enjoy Tooway...**

# With FAP active

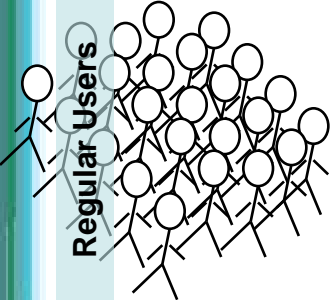
During first week



abUser

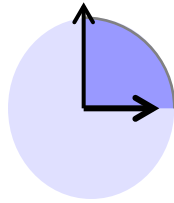


Regular Users

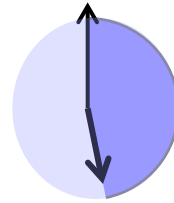


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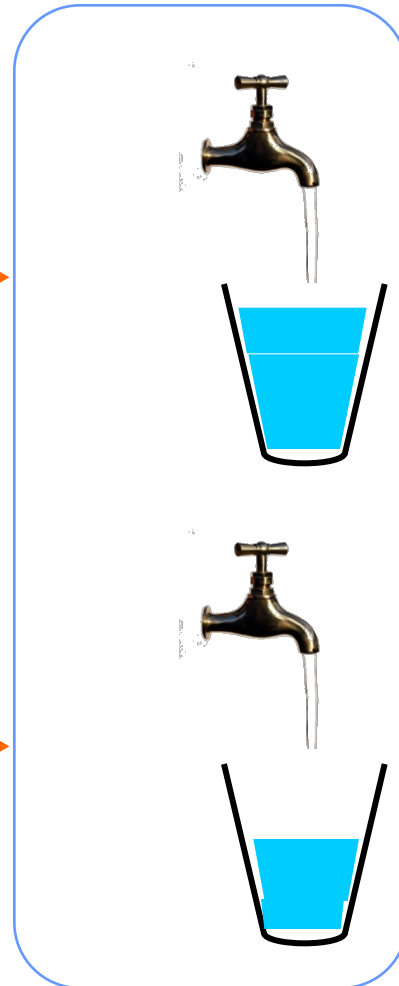
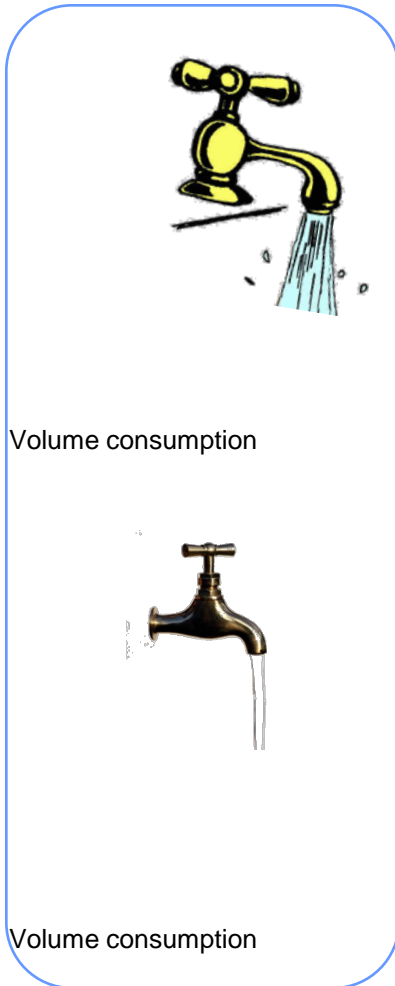
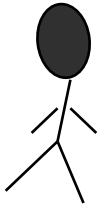
During first week



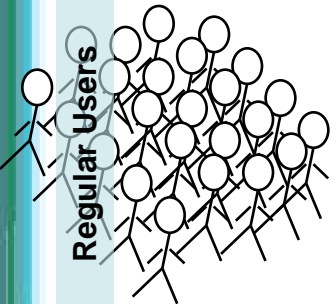
Then, up to the second week



abUser

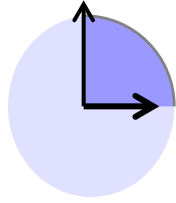


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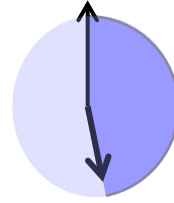


# With FAP active

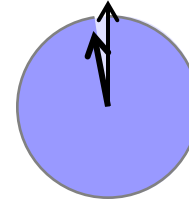
During first week



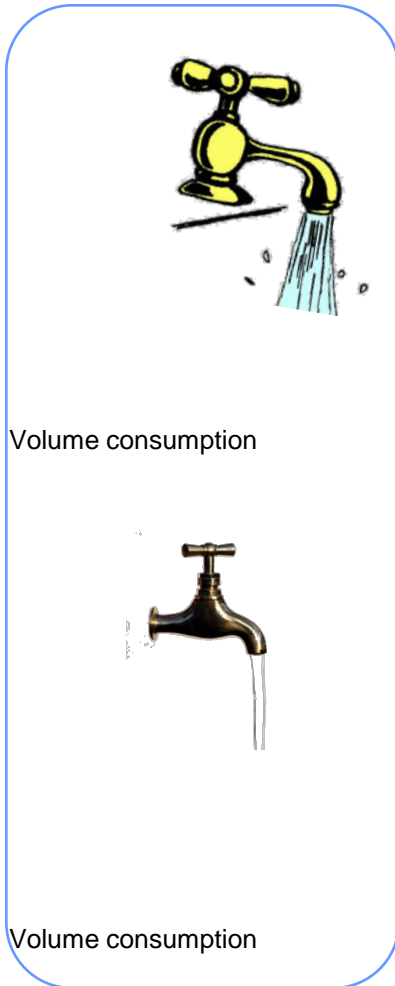
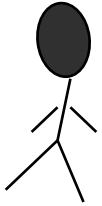
Then, up to the second week



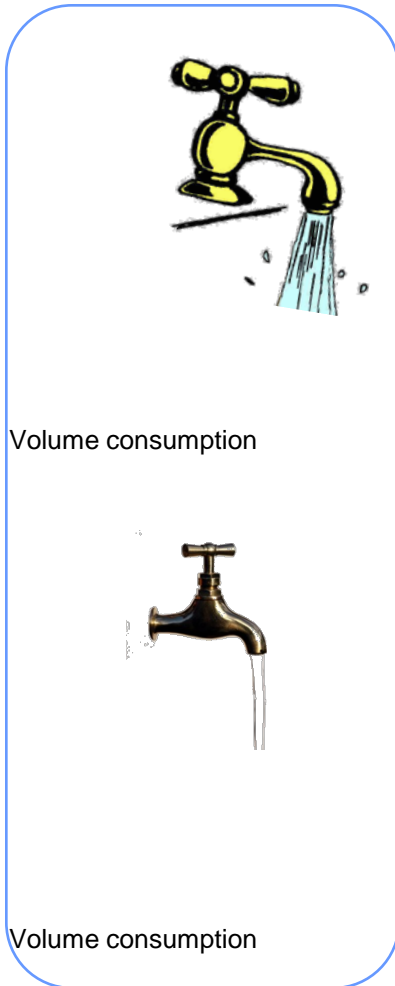
After four weeks



abUser



Regular Users



At the end of month



Everyone could have fully enjoyed Tooway!

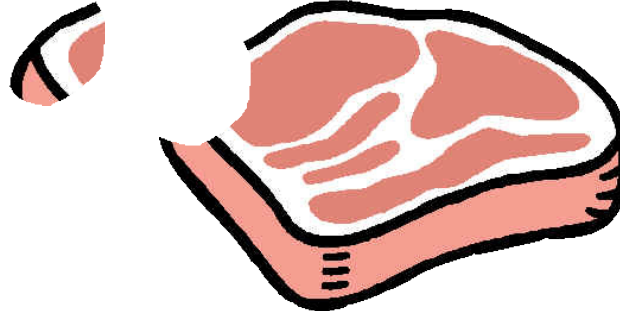


# Conclusion: without the FAP

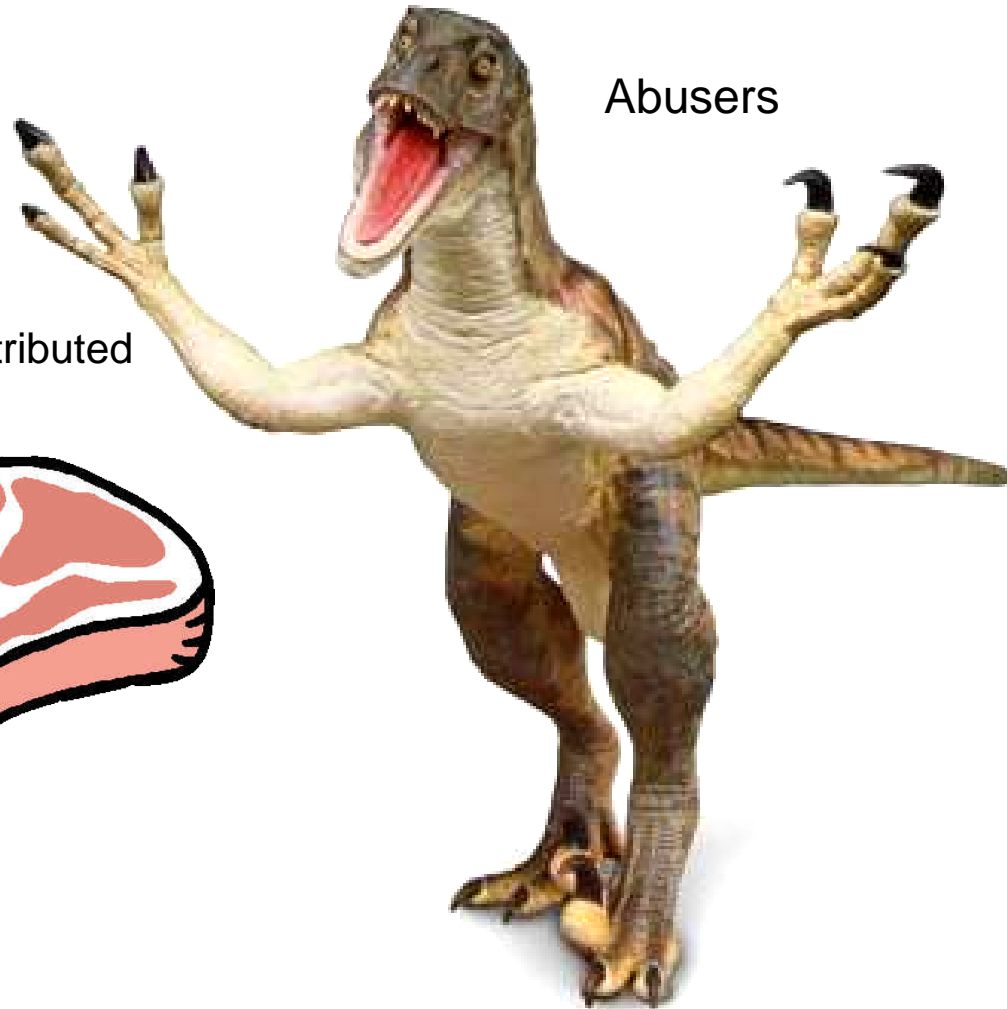
Regular users



Resources to be distributed



Abusers



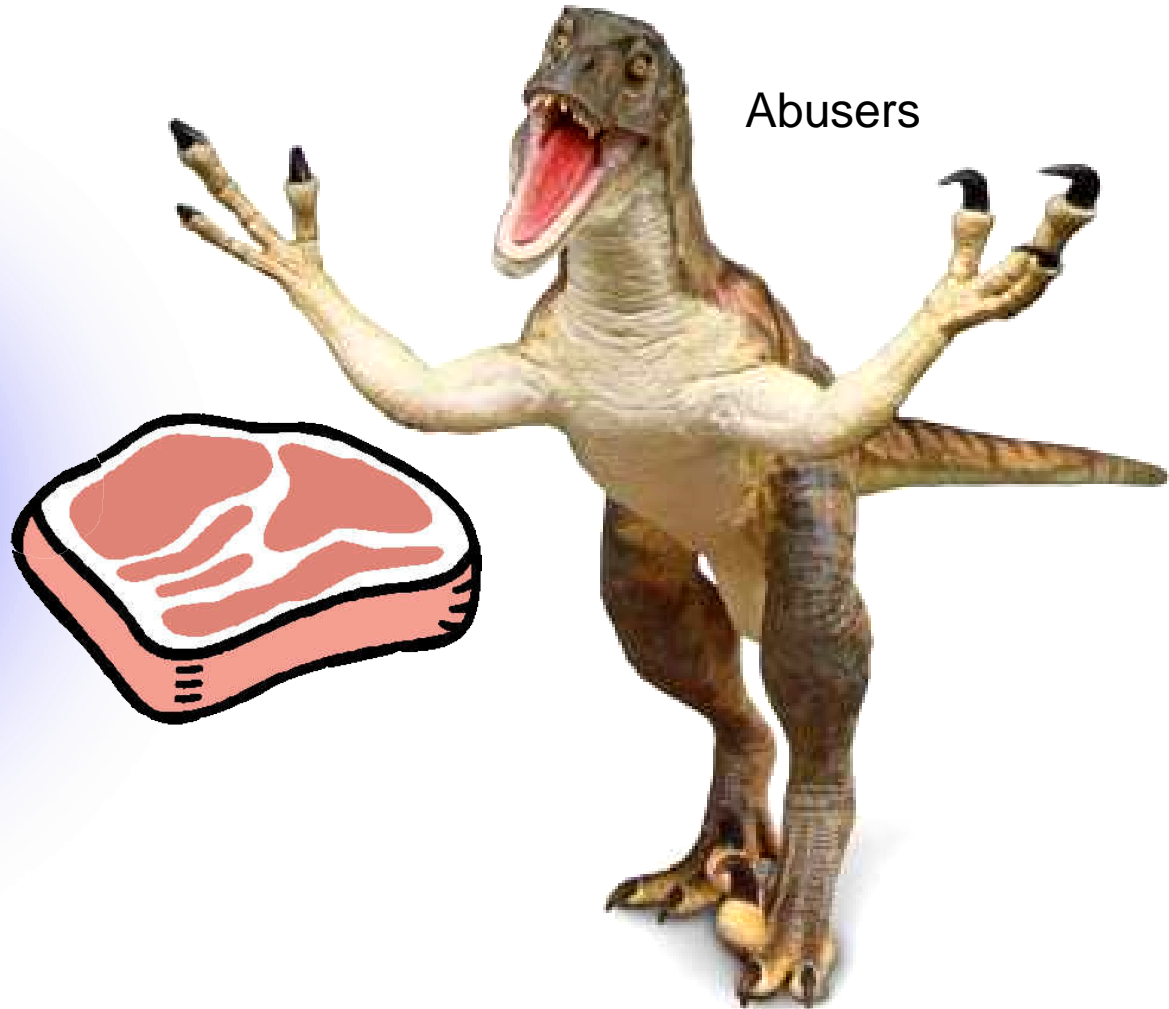
There's not much left for ordinary beings...

# Conclusion: Need of FAP

Regular users



Abusers

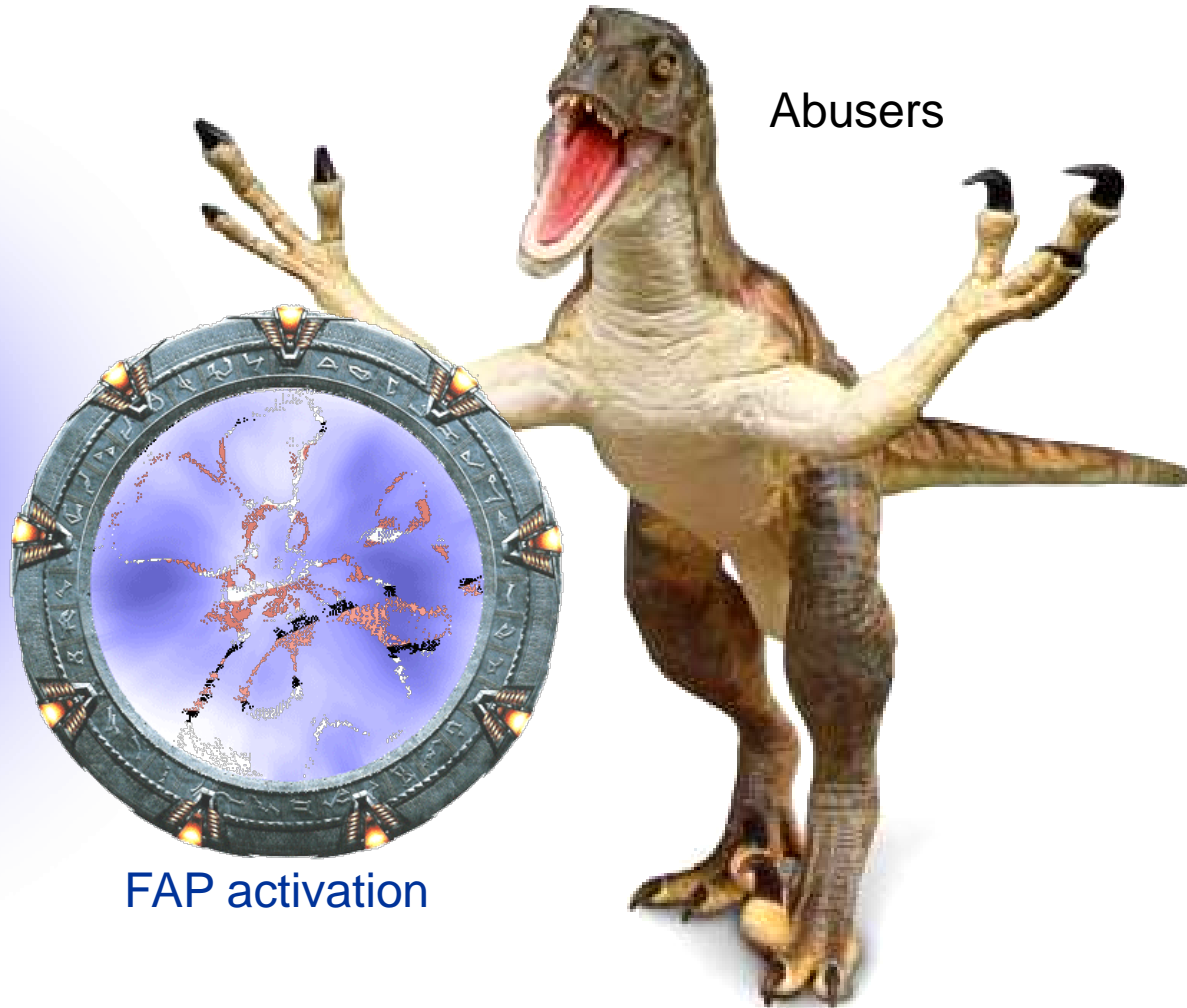


# Conclusion: applying the FAP

Regular users



Abusers

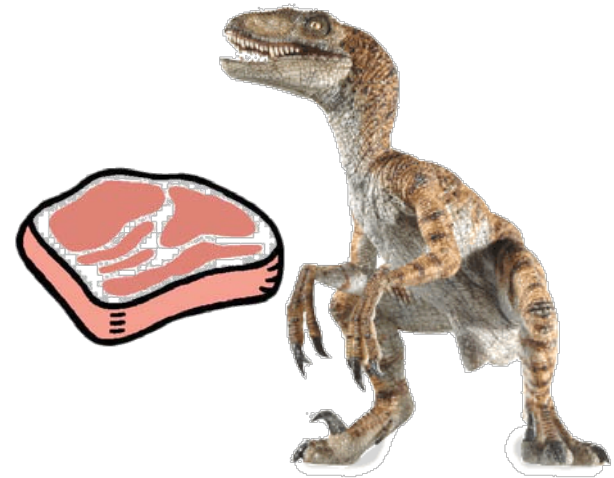


# Conclusion: with the FAP applied

Regular users



Abusers



**It is fair sharing of resources!**

**May the FAP be with you!**

# Contents

> FAP purpose

> FAP principle

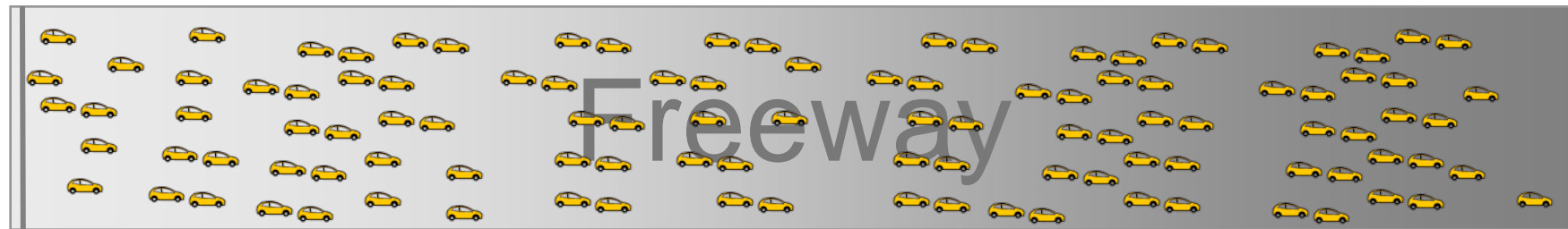
> **How does it works?**

# How does FAP works?

We have 5 cameras checking what is happening on the freeway

check  
point

up to now



arrival  
at  
check  
point

NOW

1 hour  
ago

4 hours  
ago

1 day  
ago

1 week  
ago

4 weeks  
ago

More cameras,

more control of bandwidth

for better guarantee of service

1

camera

2

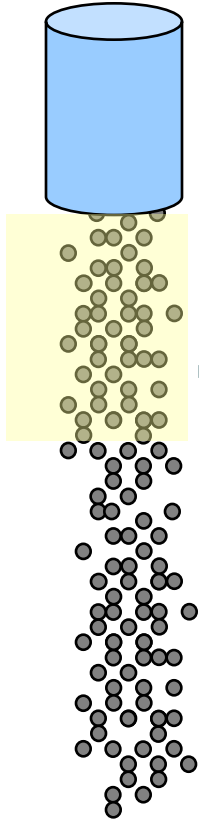
3

4

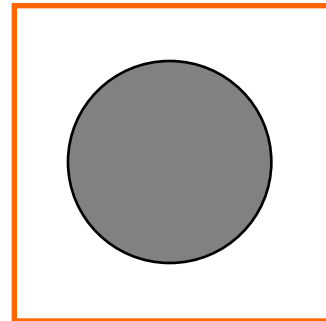
5

# What are the cameras filming?

User resource usage



Elementary resource



mails  
Resource  
~ 100 Kbps \*  
could be used for



music



films



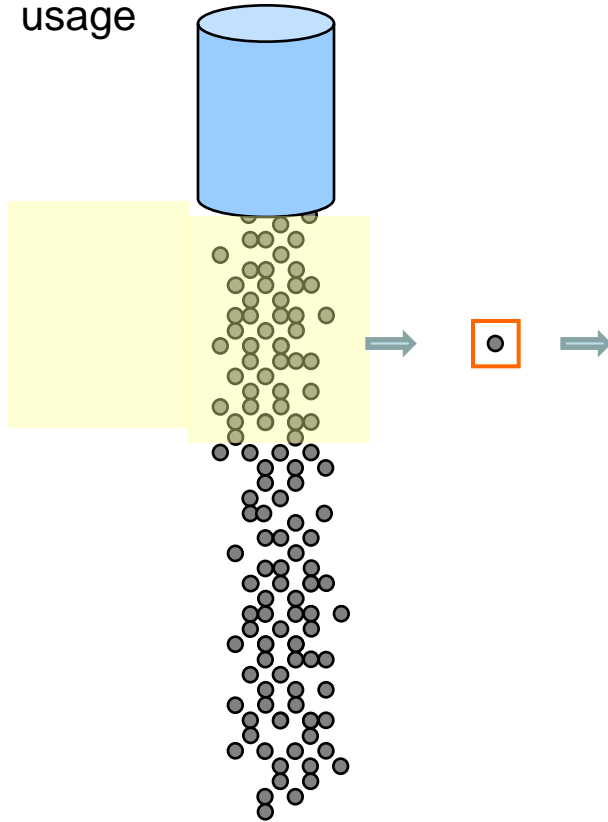
web contents



documents

# What are the cameras filming?

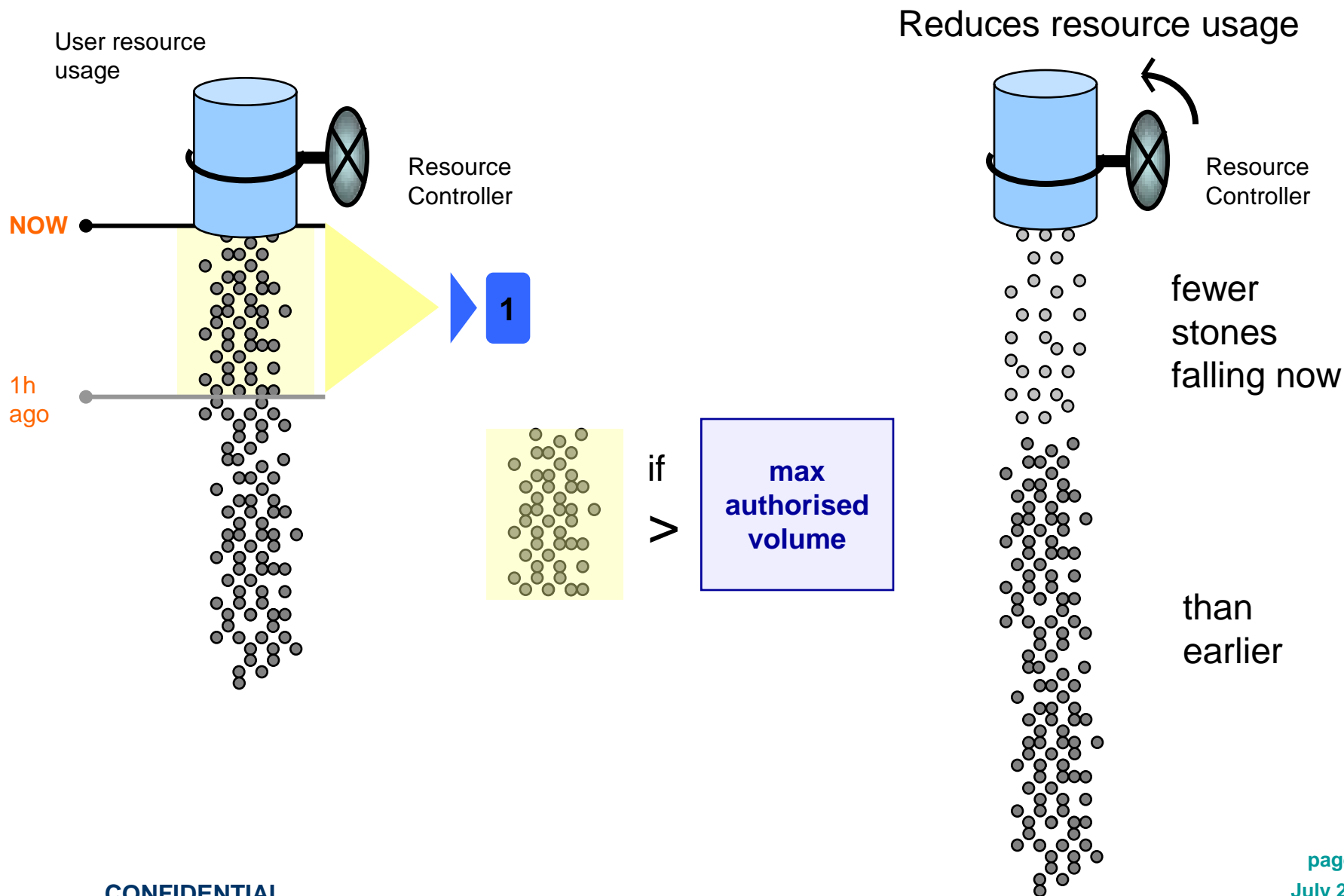
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# How does FAP use the cameras?



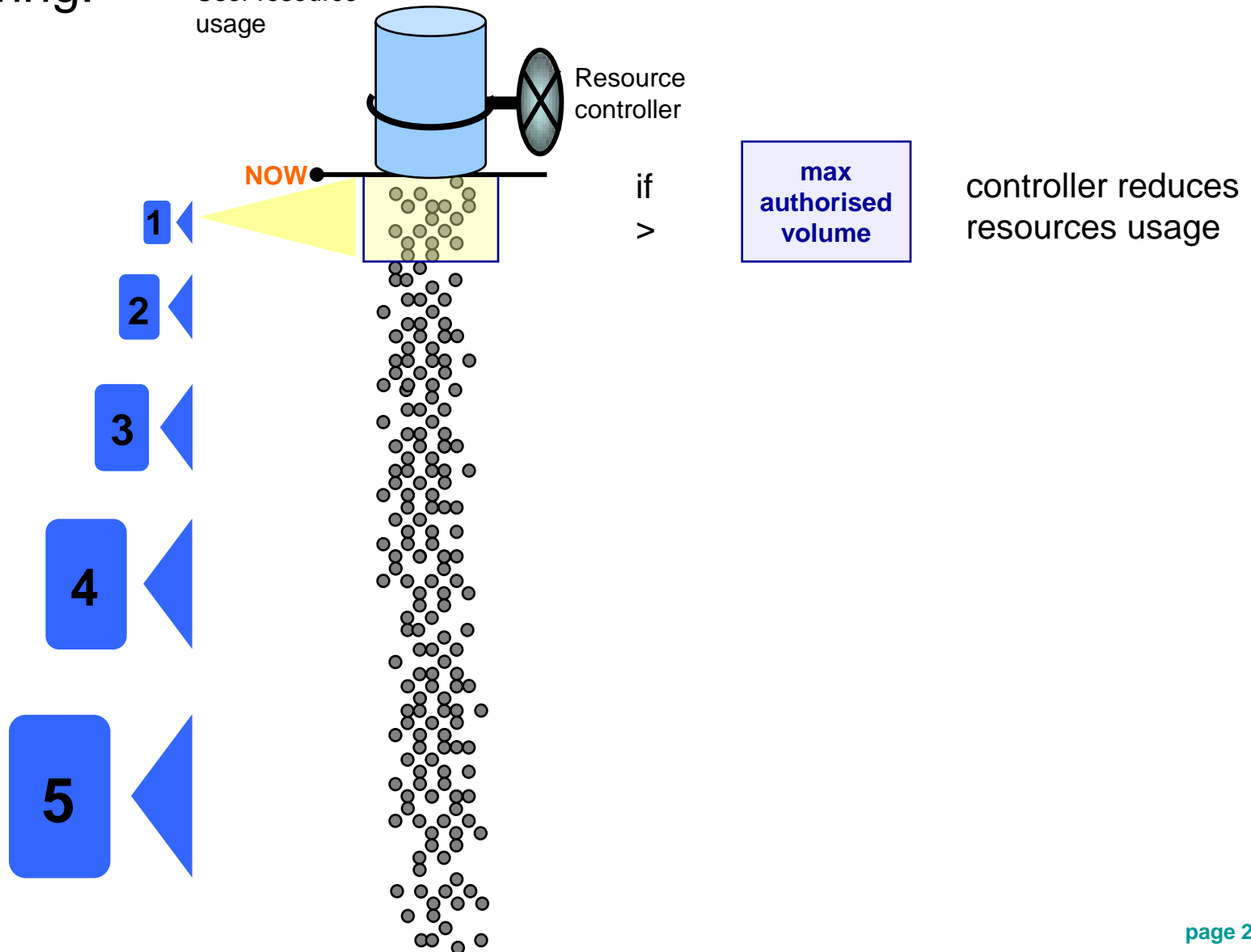
# How does FAP use the cameras?

Considering:

User resource usage

Resource controller

The 5 cameras



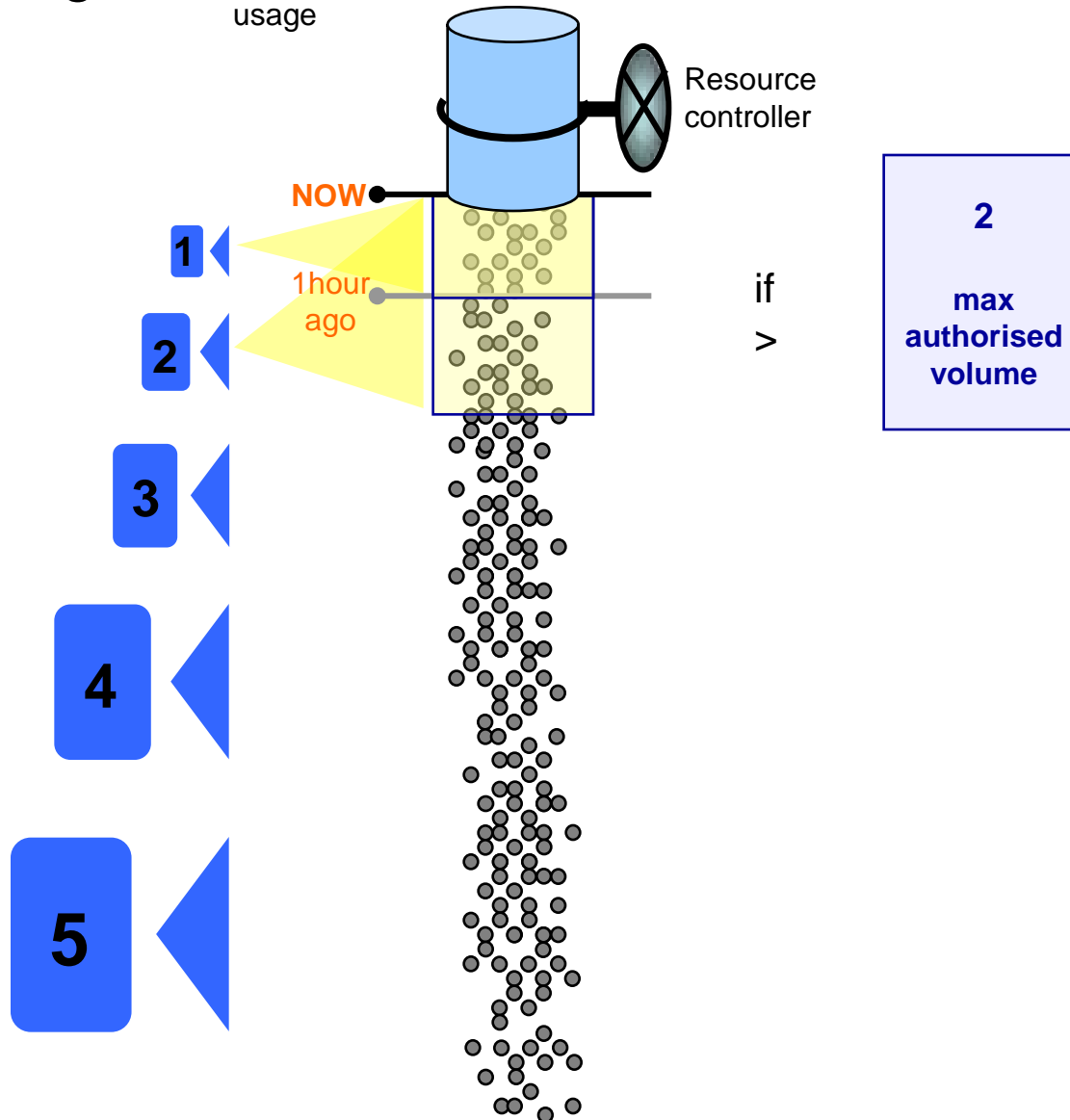
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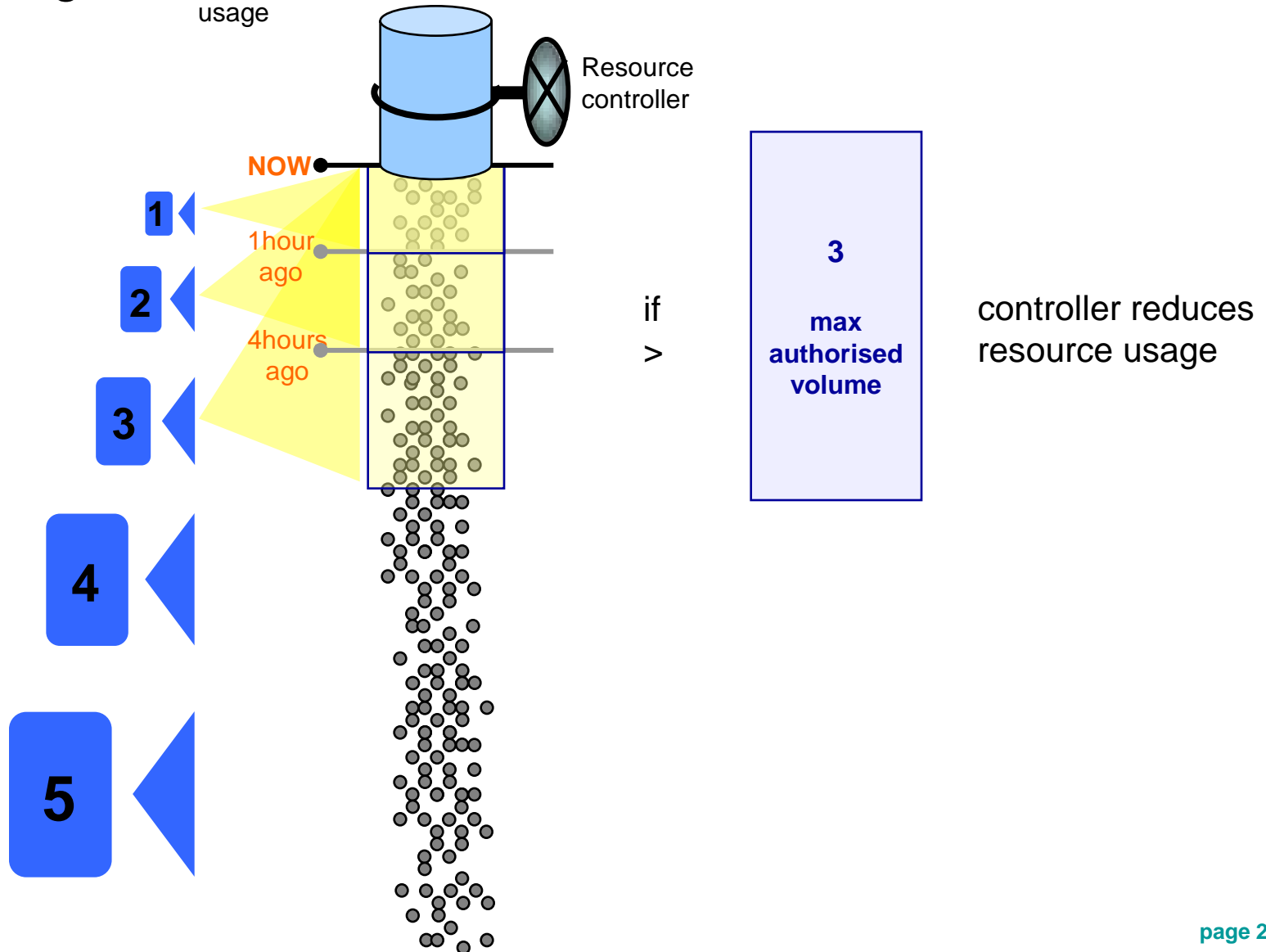
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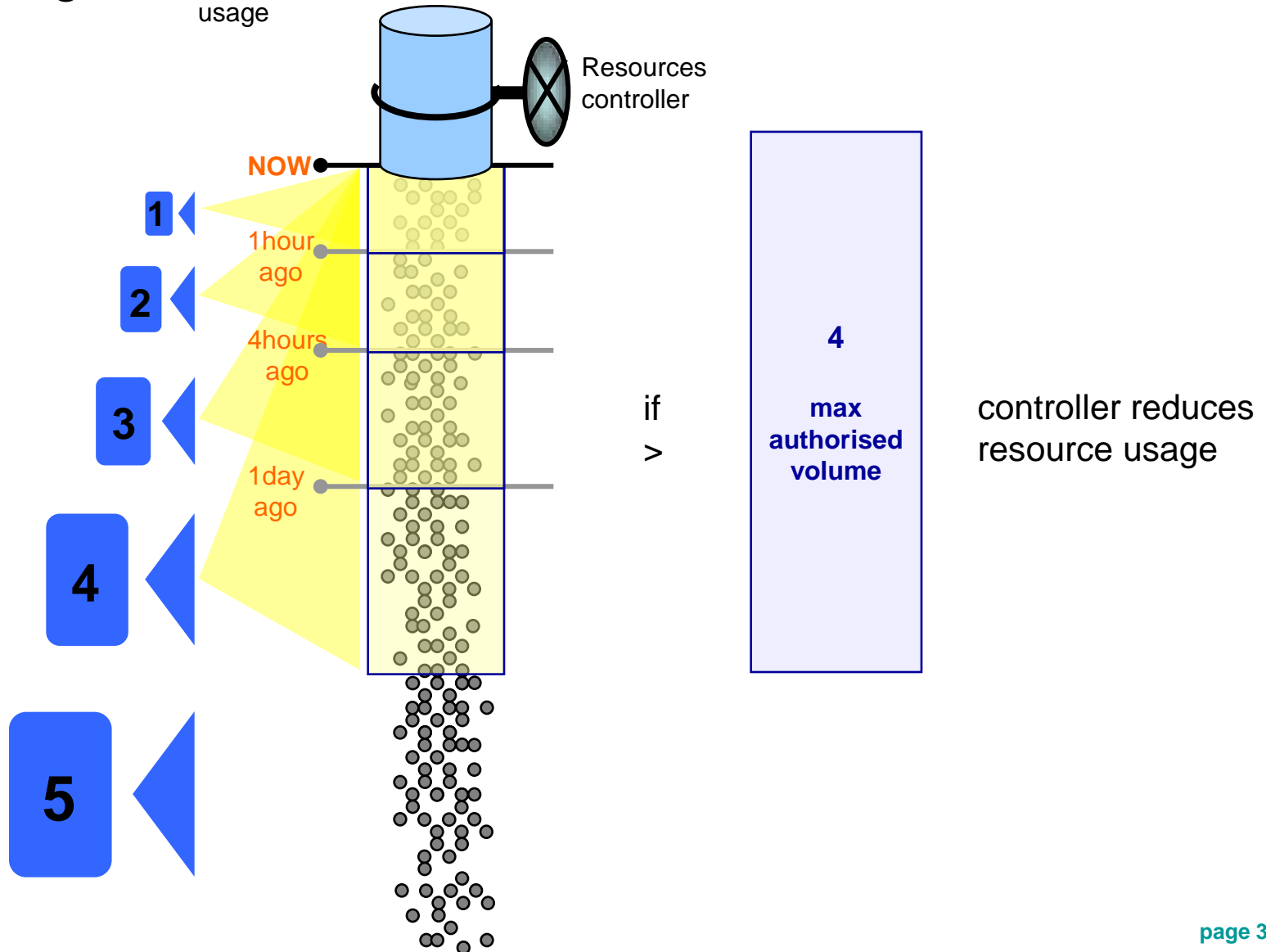
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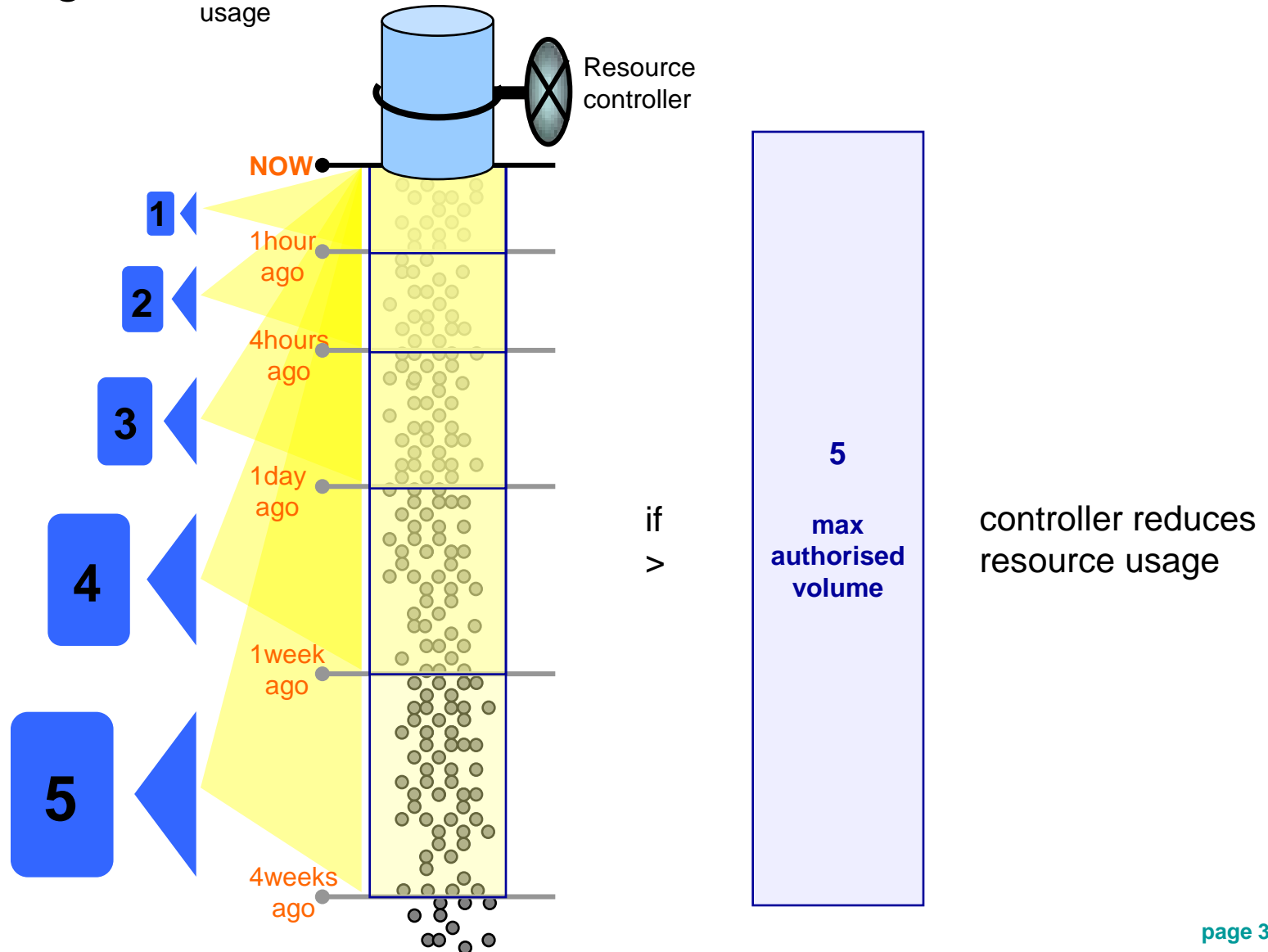
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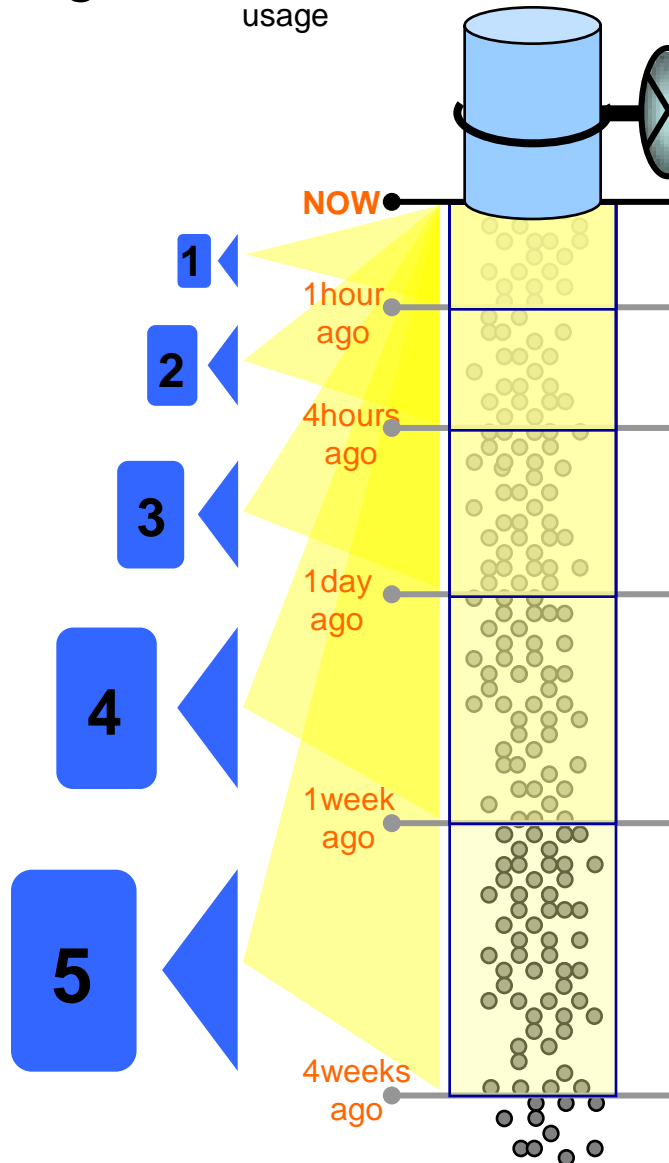
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Considering:

User resource usage

Resource controller

The 5 cameras



Five cameras acting at the same time to apply a very close control of resource

# Conclusion

- > The FAP in five time windows-controllers
- > for a very close control of bandwidth usage
- > to manage the usage of resources
- > in order to ensure a fair sharing
- > and guarantee a performing service to all Users



# Animation principle

- > The ab-user and the regular user are cats: big cat or ordinary cat
- > They are both allowed to walk the same length of broadband service
- > But they are not sprinting at the same speed
- > The FAP is slowing the big-cat (abuser) in order to prevent it from invading all the lanes, in order to leave space for the other runners

# Because it is the same BROAD-BAND for all

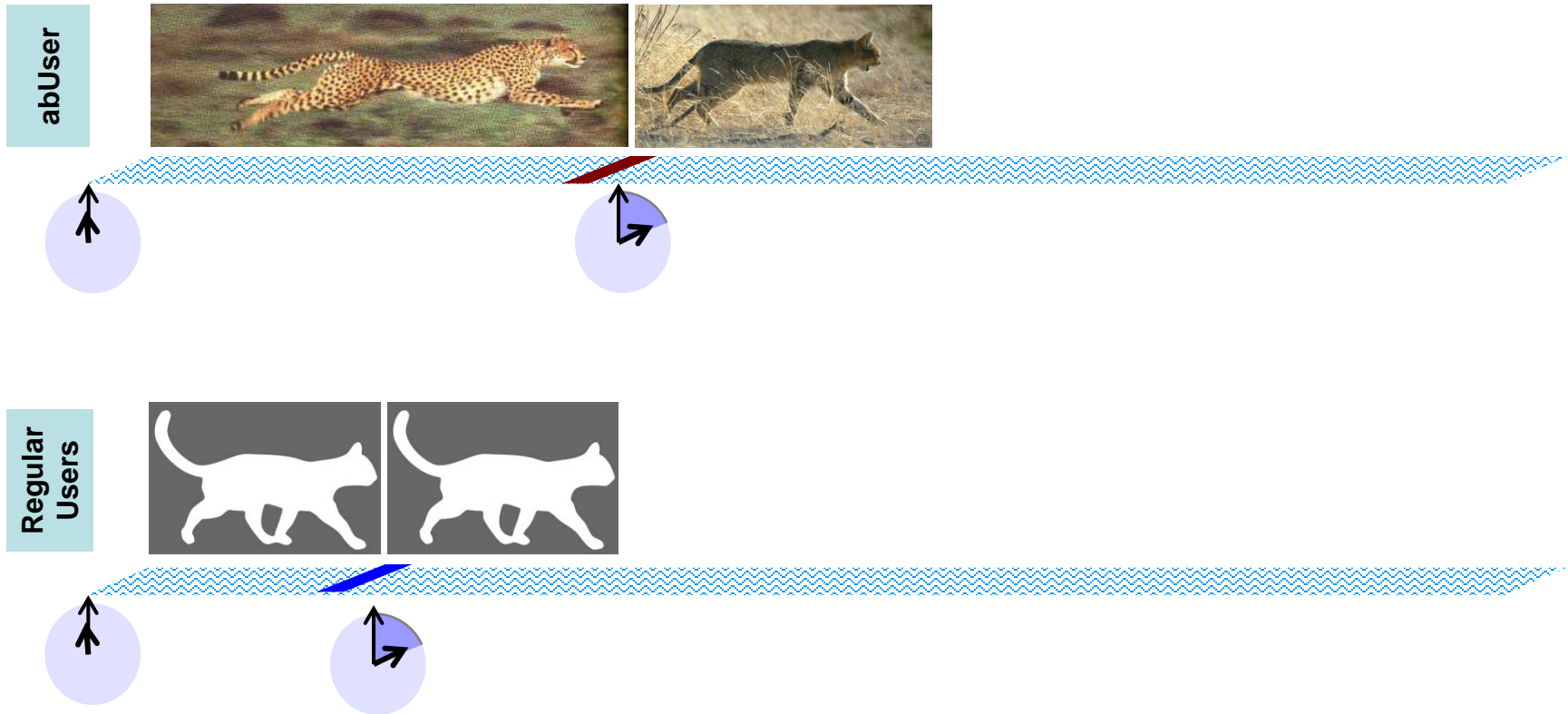
If he runs too fast



# Because it is the same BROAD-BAND for all

If he runs too fast

The active FAP would slow him down

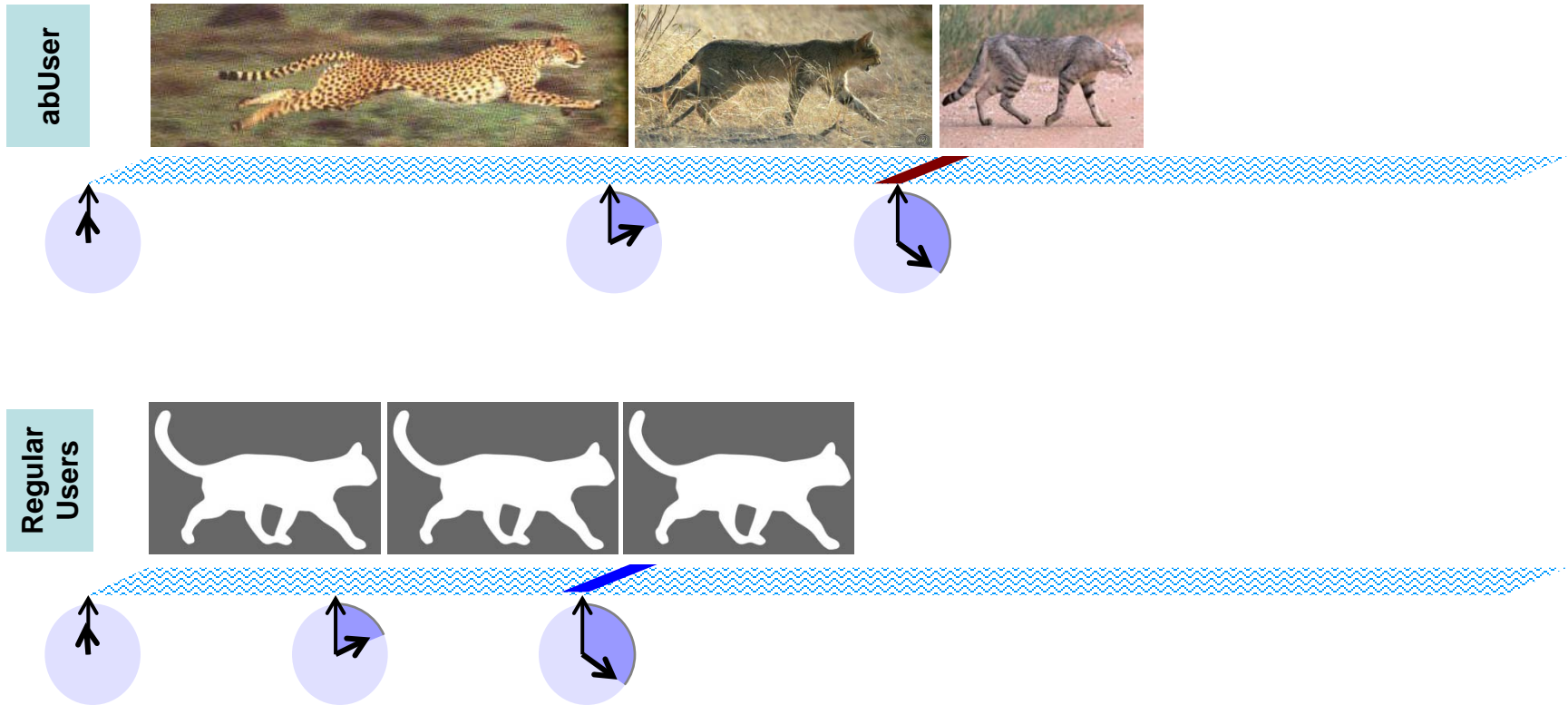


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Gradually ..... over time

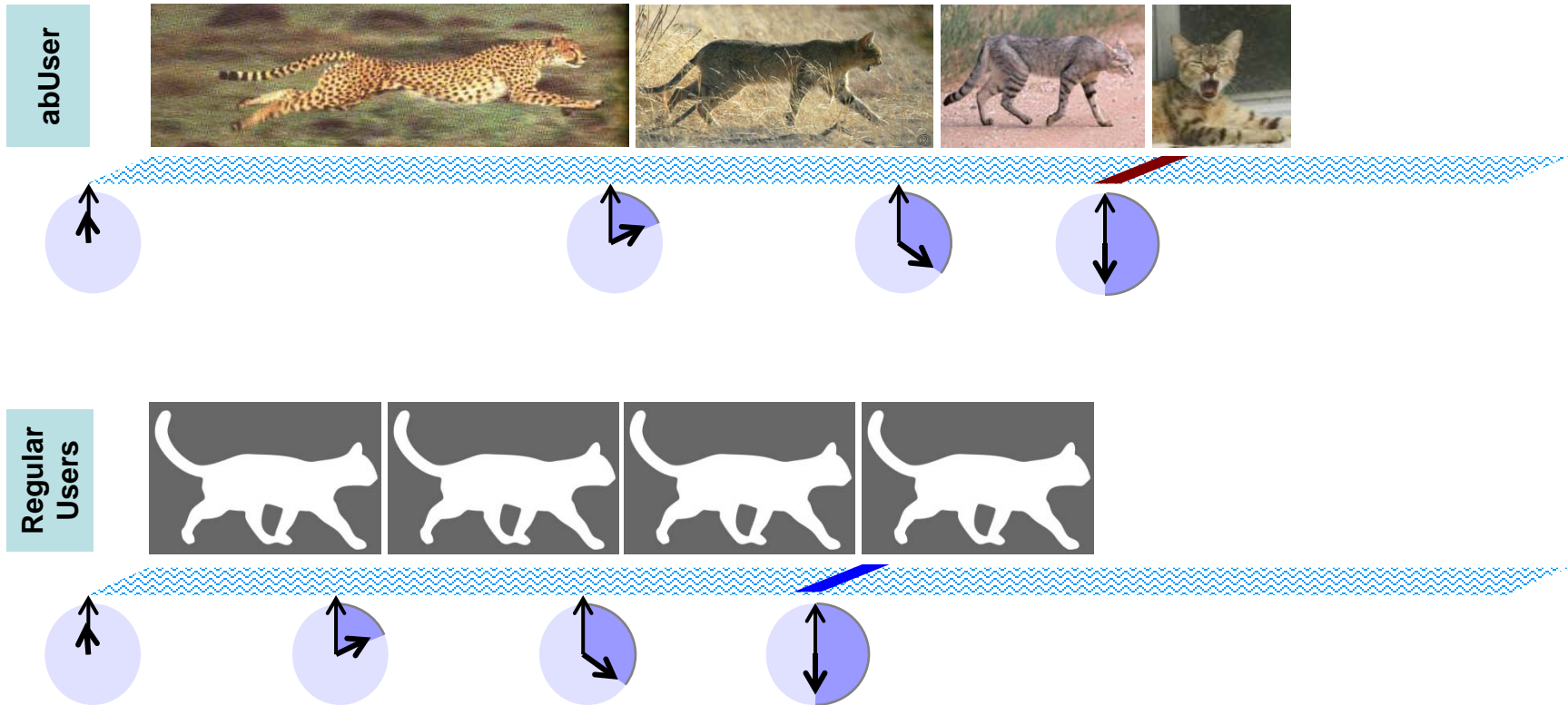


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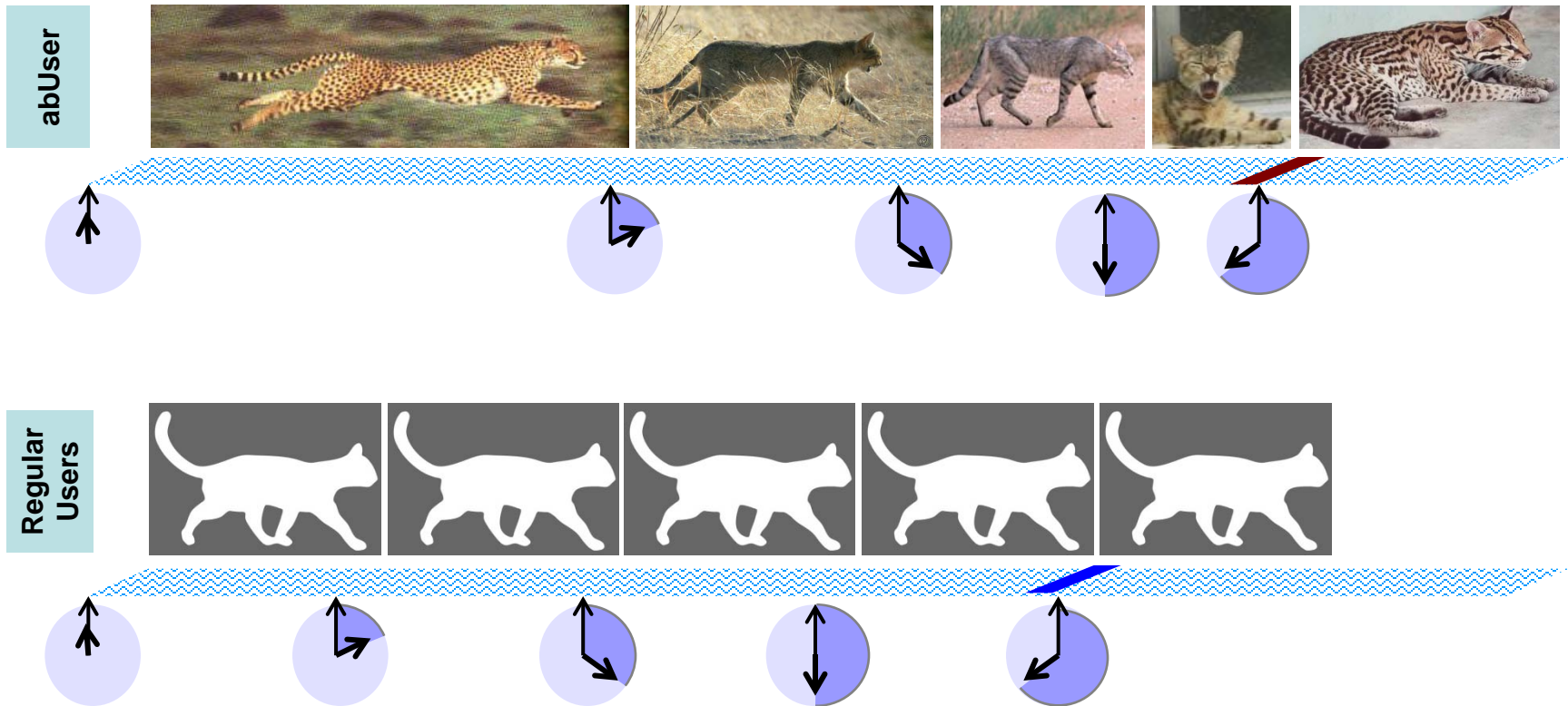
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Gradually ..... over time

In any case he won't go farther than anyone



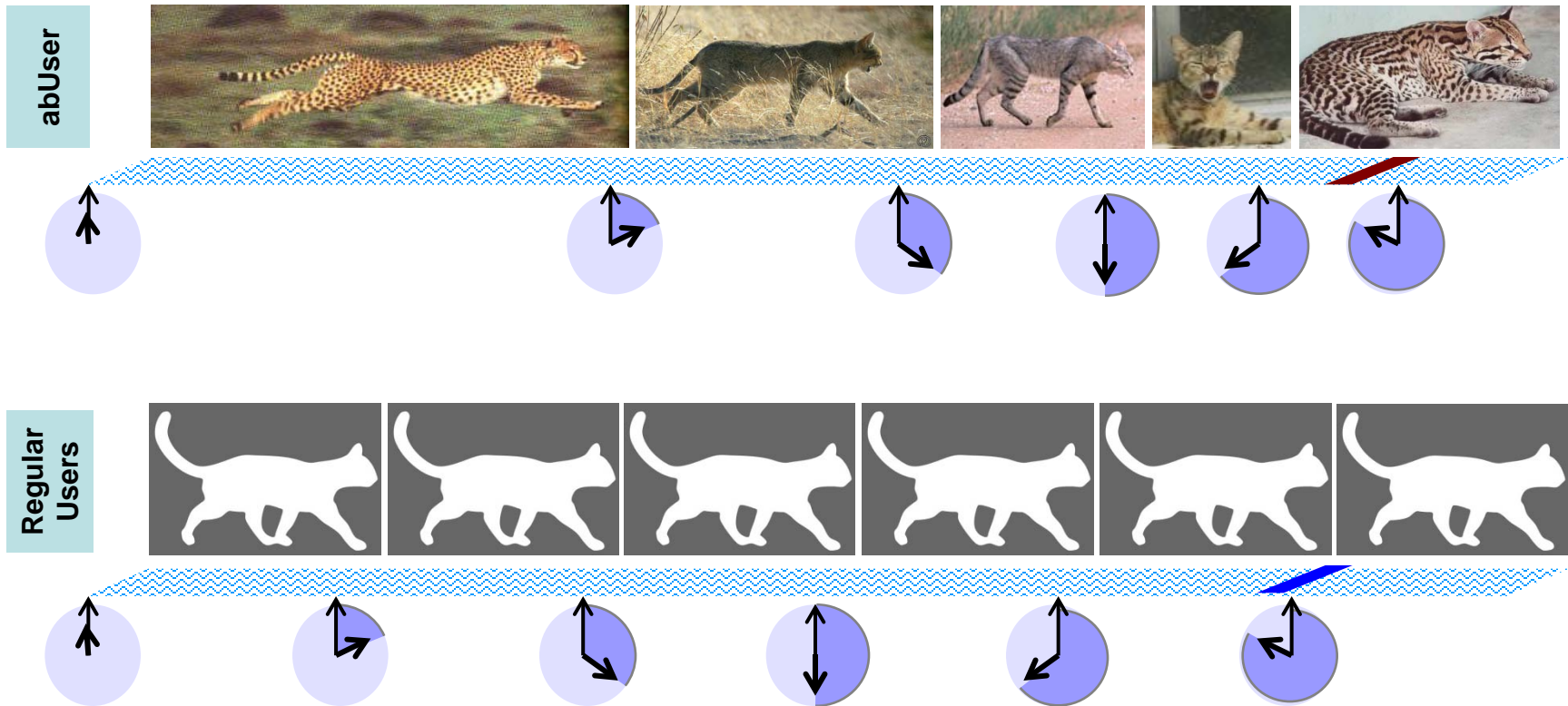
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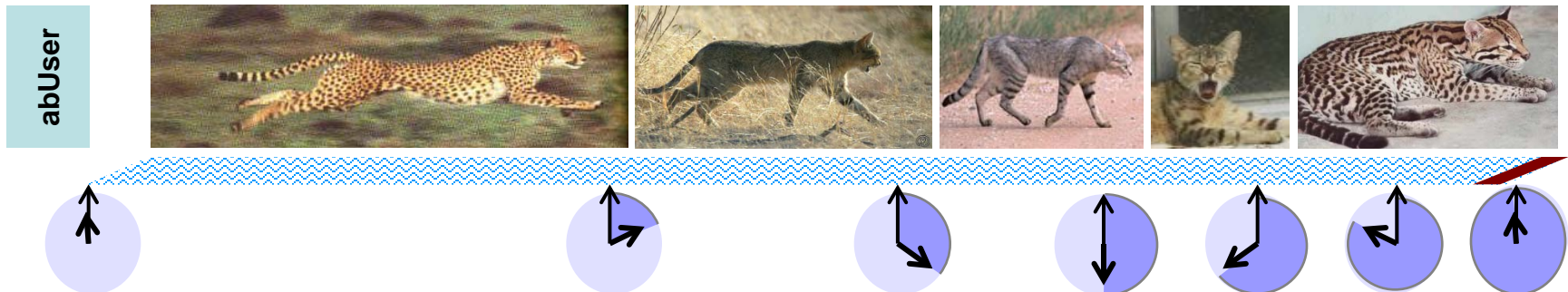
# Because it is the same BROAD-BAND for all

If he runs too fast

The active FAP would slow him down

Time after time ... on and on

In any case he won't go farther than anyone



And regular users going at their regular pace will get there as well !

