

# Instructions

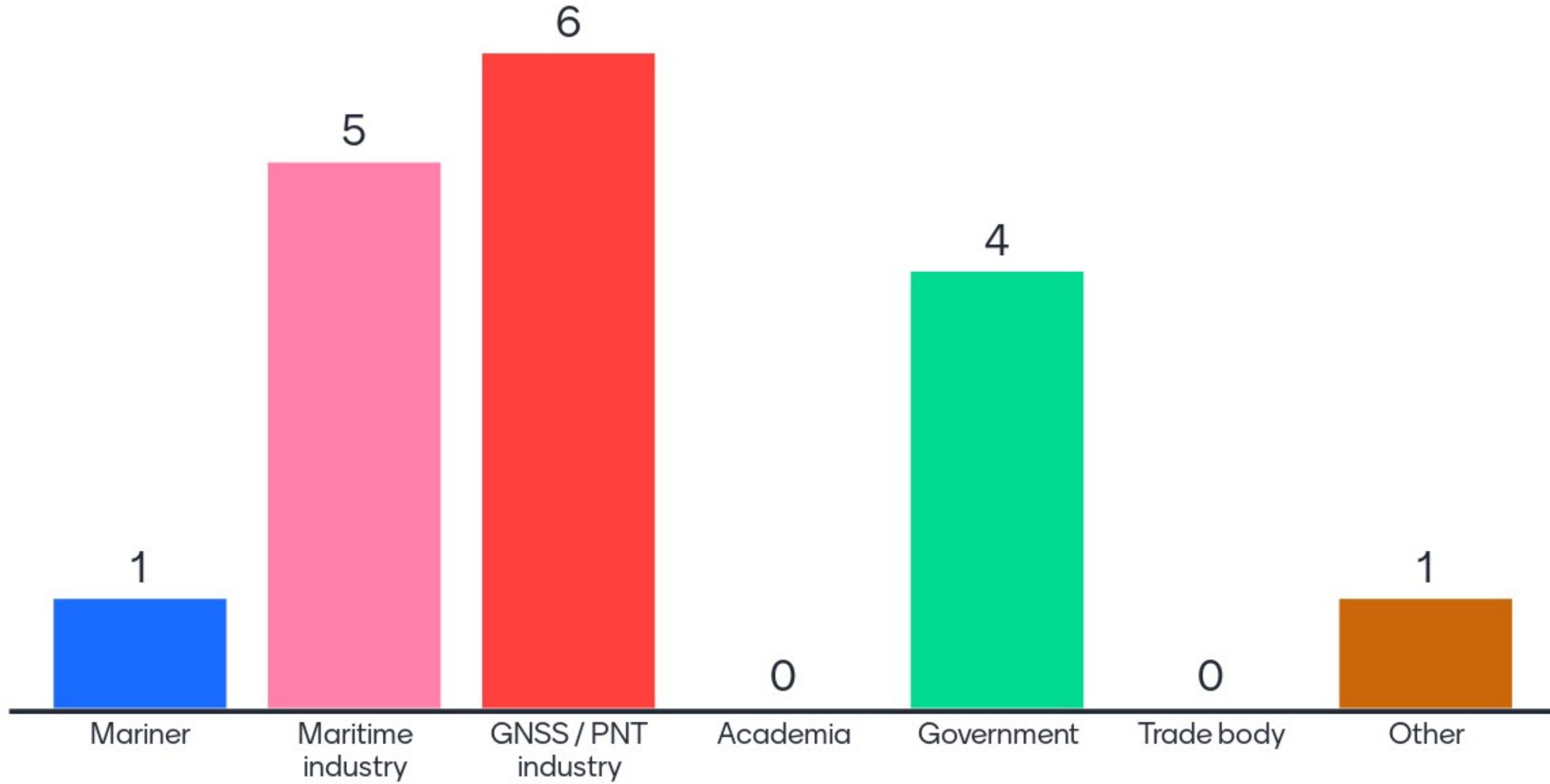
Go to  
**[www.menti.com](https://www.menti.com)**

Enter the code

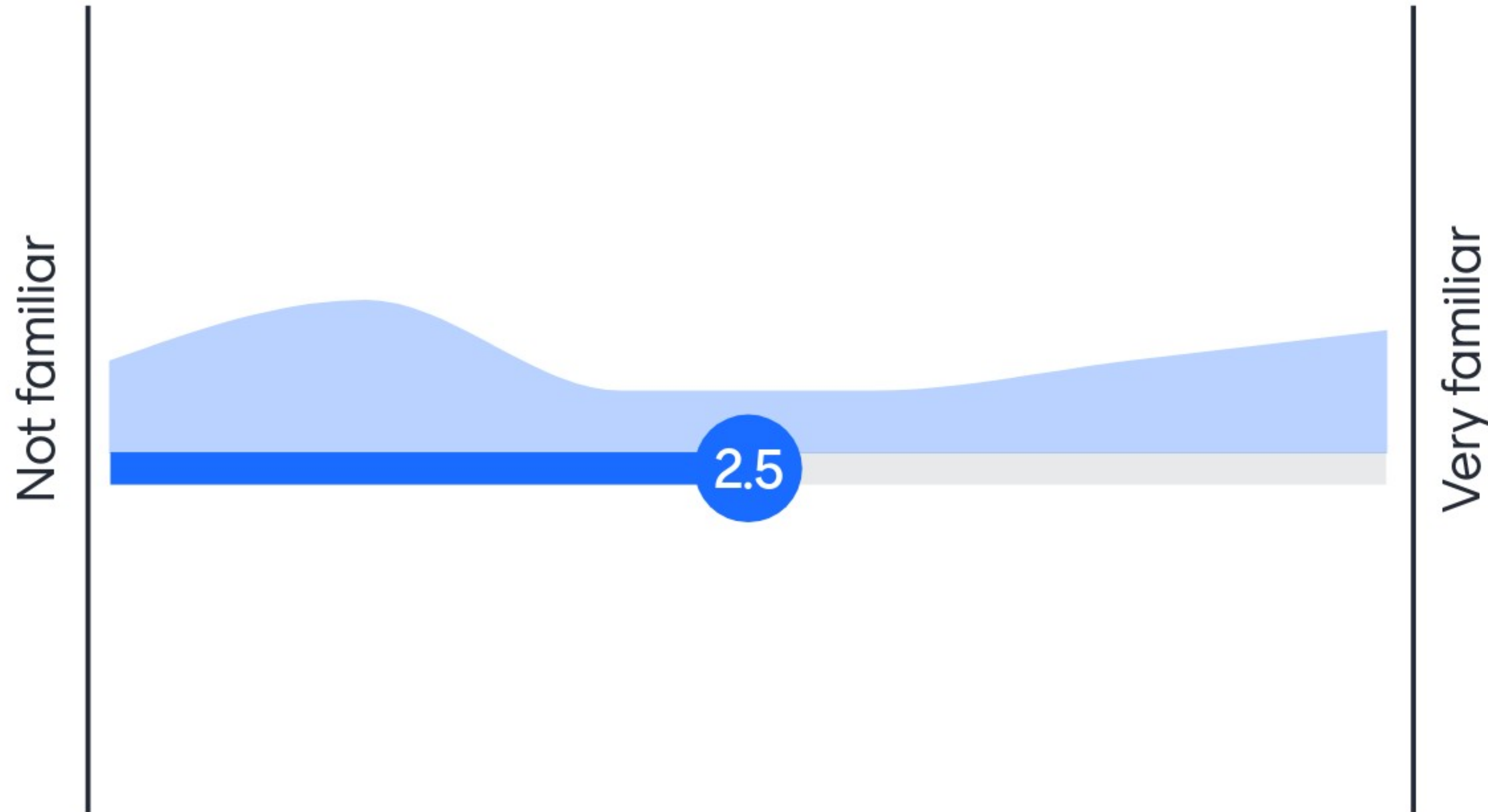


Or use QR code

# Which best describes your organisation?



# How familiar are you with MarRINav?



# What does "integrity" mean to you?

Available

Assurance

Reliable quality

Accurate

The ability to "trust" what you are seeing

Reliable

Reliable

Alert in event of performance out of spec

Trust. Also not well understood generally. Often misinterpreted

# What does "integrity" mean to you?

Trust from user

Trustworthy

A key element of safety at sea

It will reliably work when needed

The degree to which we can trust (PNT) systems on which we rely.

Trust

The trust you can have in a position

Washington

Trustworthy

# What does "integrity" mean to you?

Understanding system performance in terms of reliability

Flag for user

Always available

Honest and reliable

Trustworthy

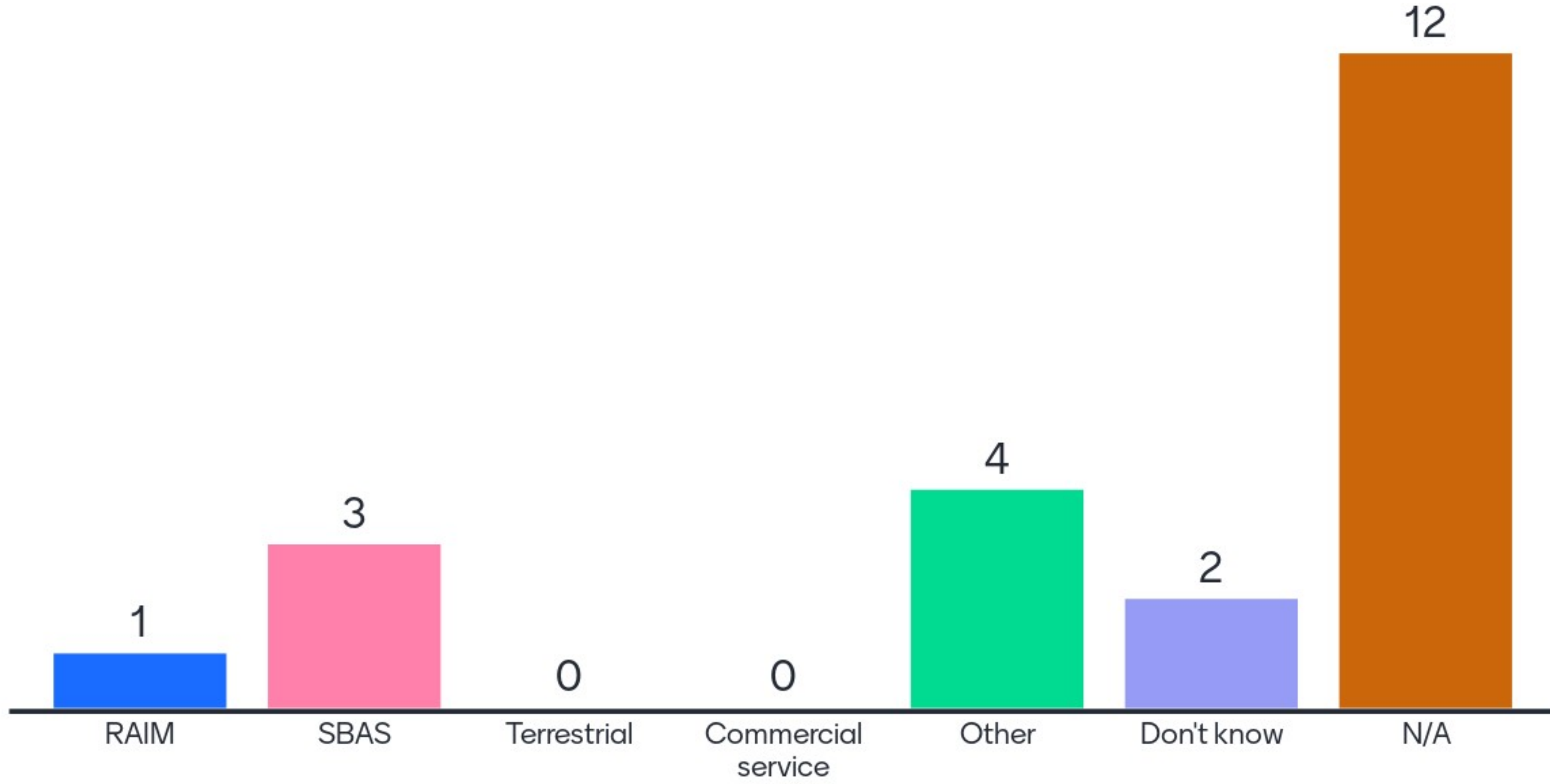
Hi love, what's for dinner tonight?

Fault detection and safety. The ability to Alert the user in time.

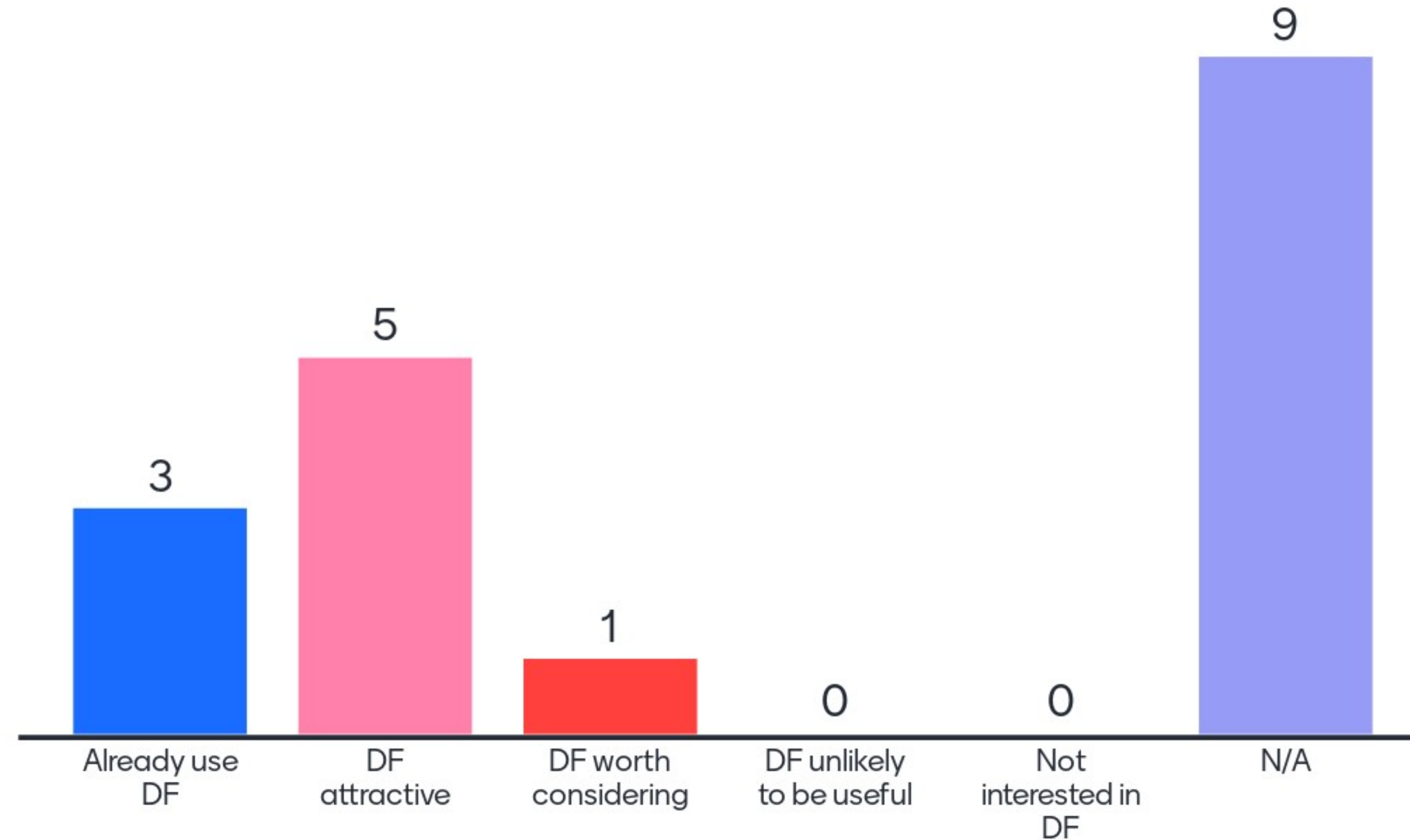
Needs an accurate definition!

Quality operation

# What is your source of integrity?

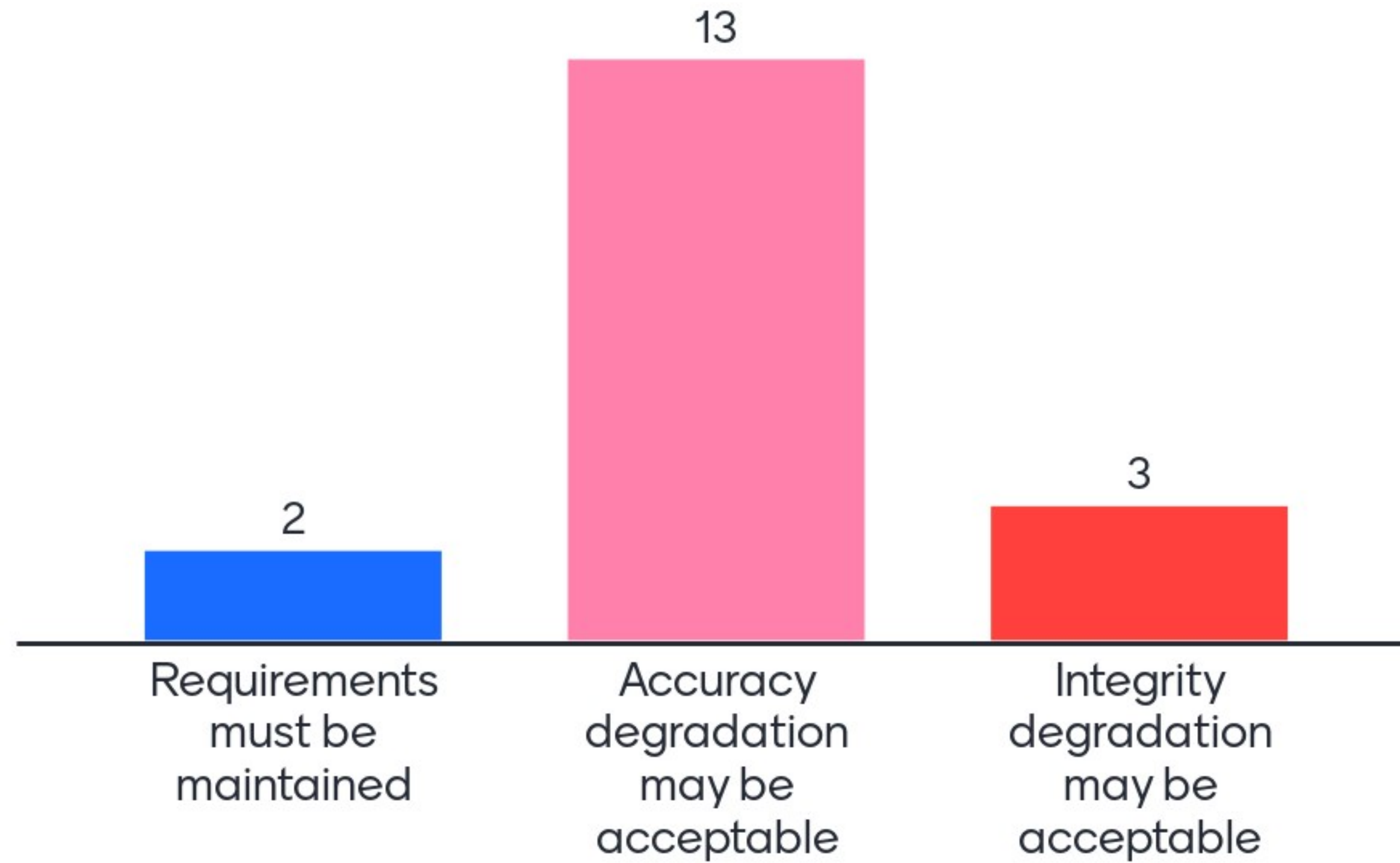


# Dual frequency (DF) benefits

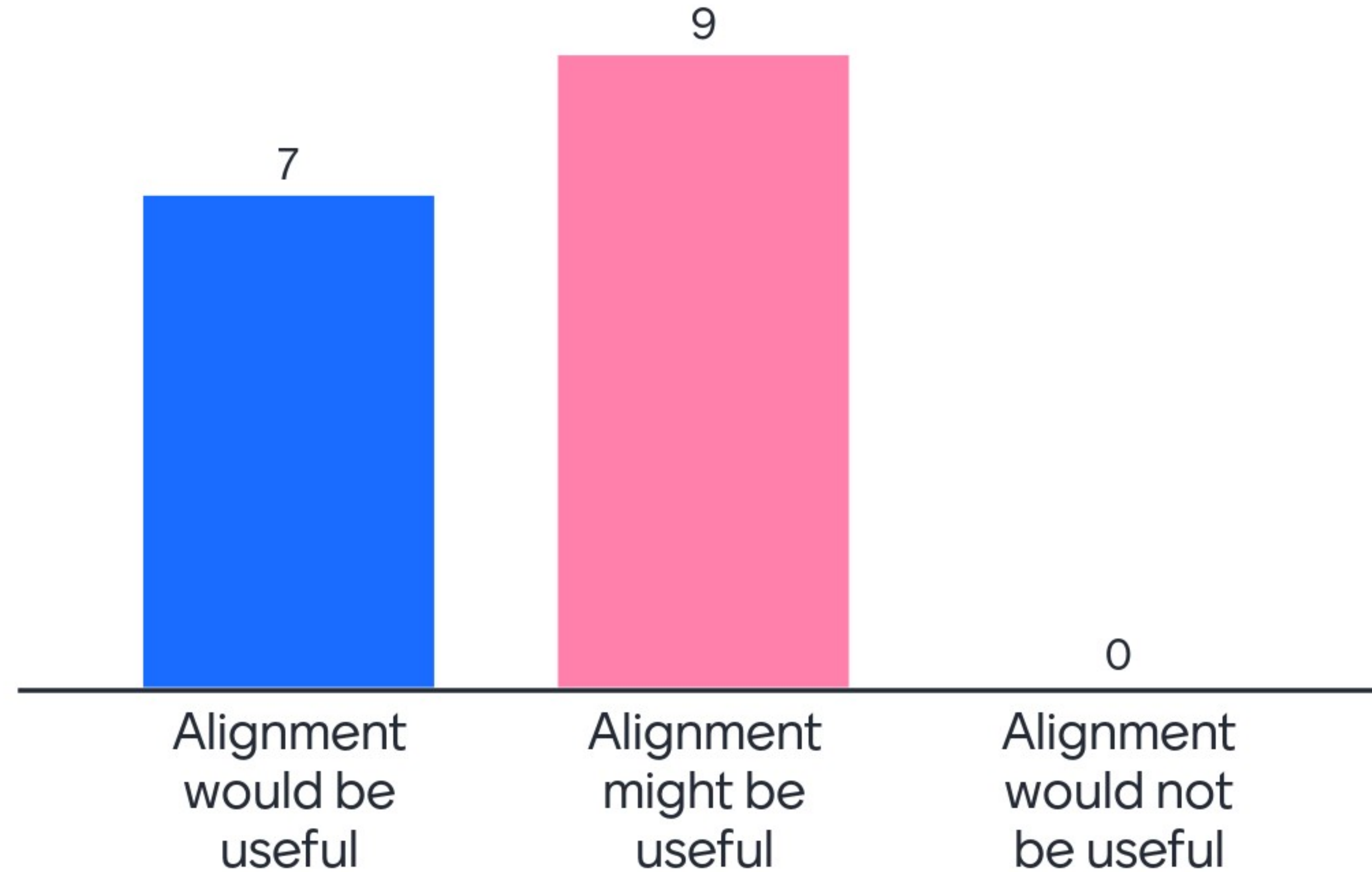




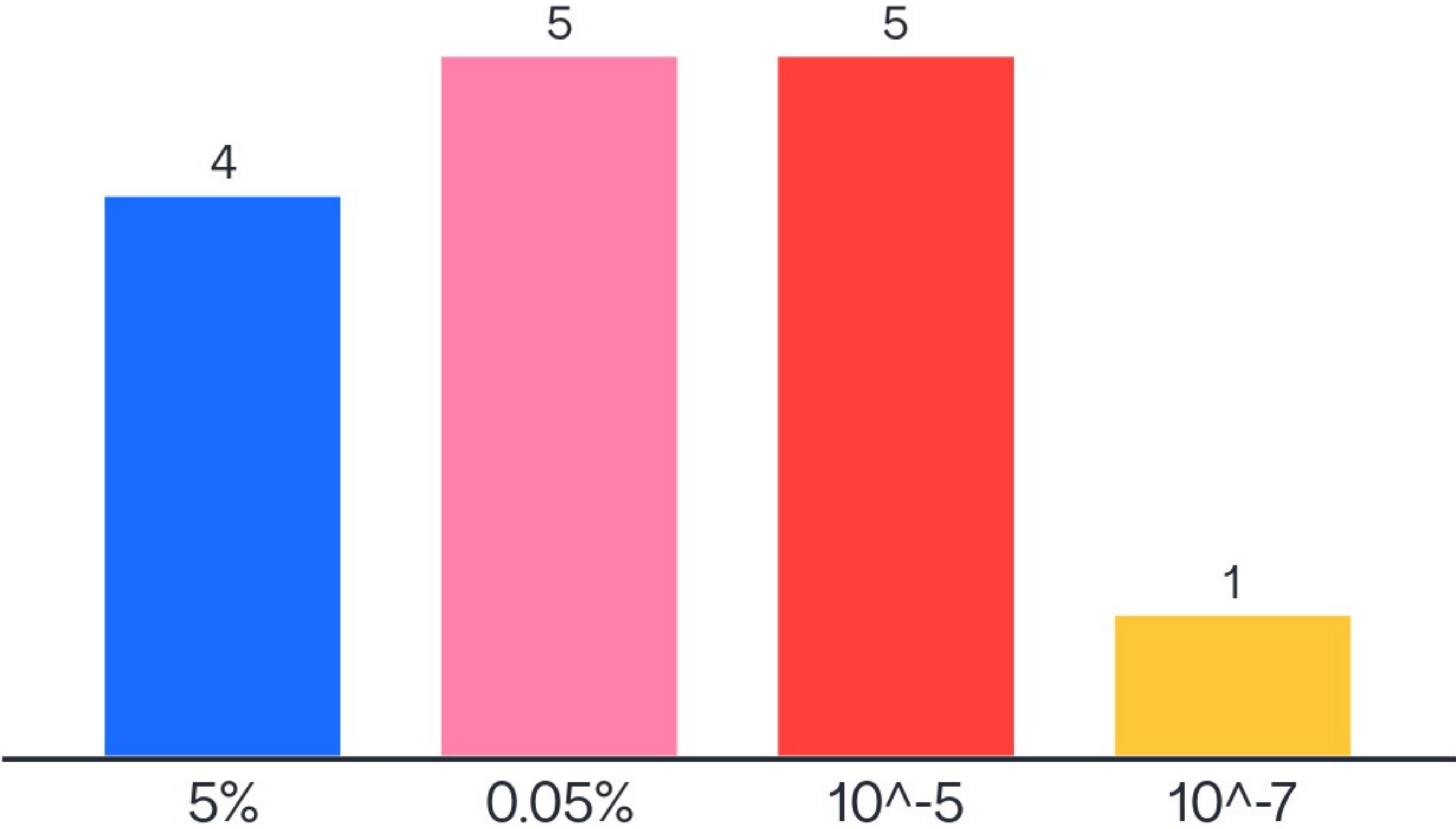
# Accuracy and integrity degrade with distance from shore



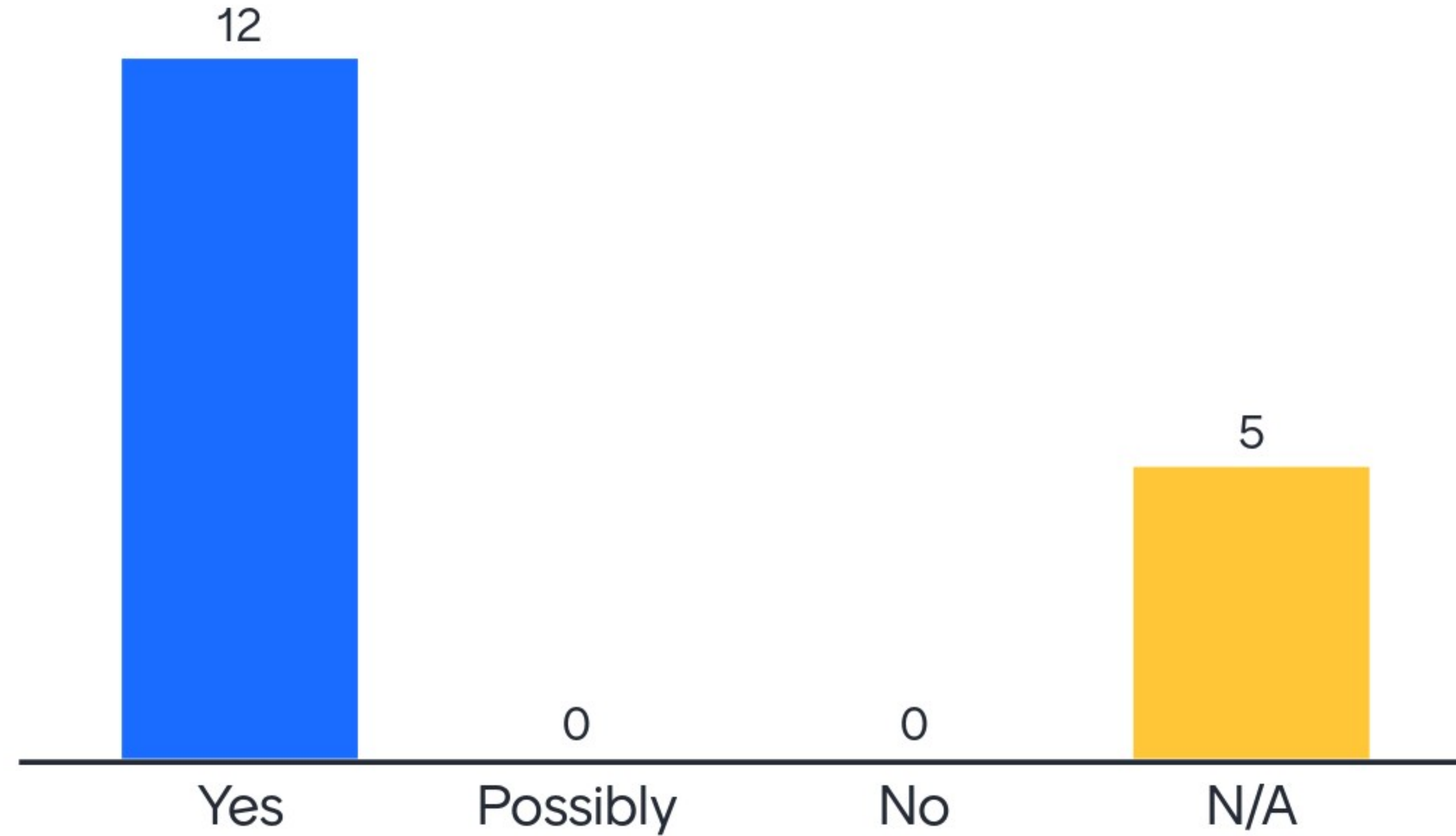
# Time alignment UTC to GPS or Galileo



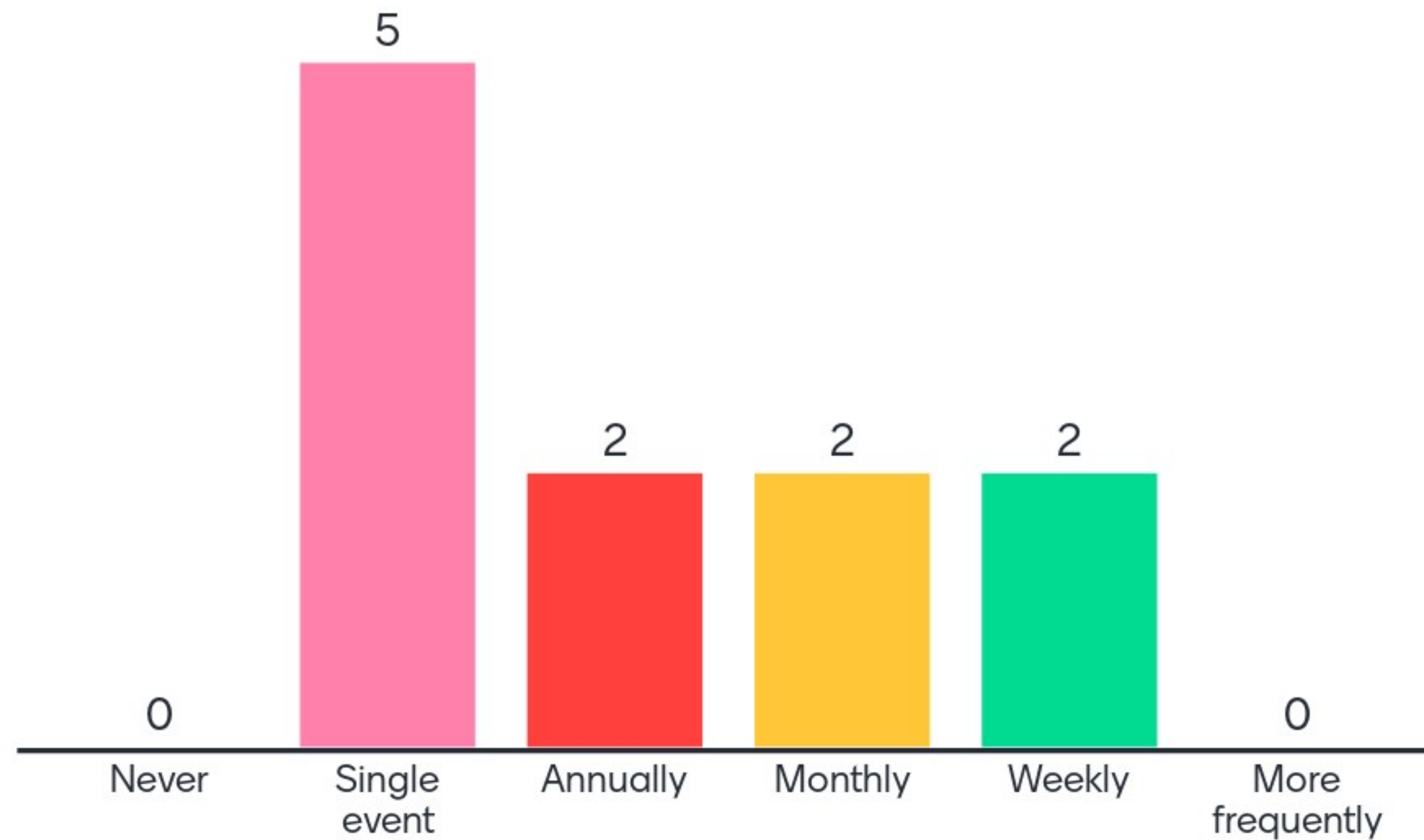
# What residual integrity risk is acceptable?



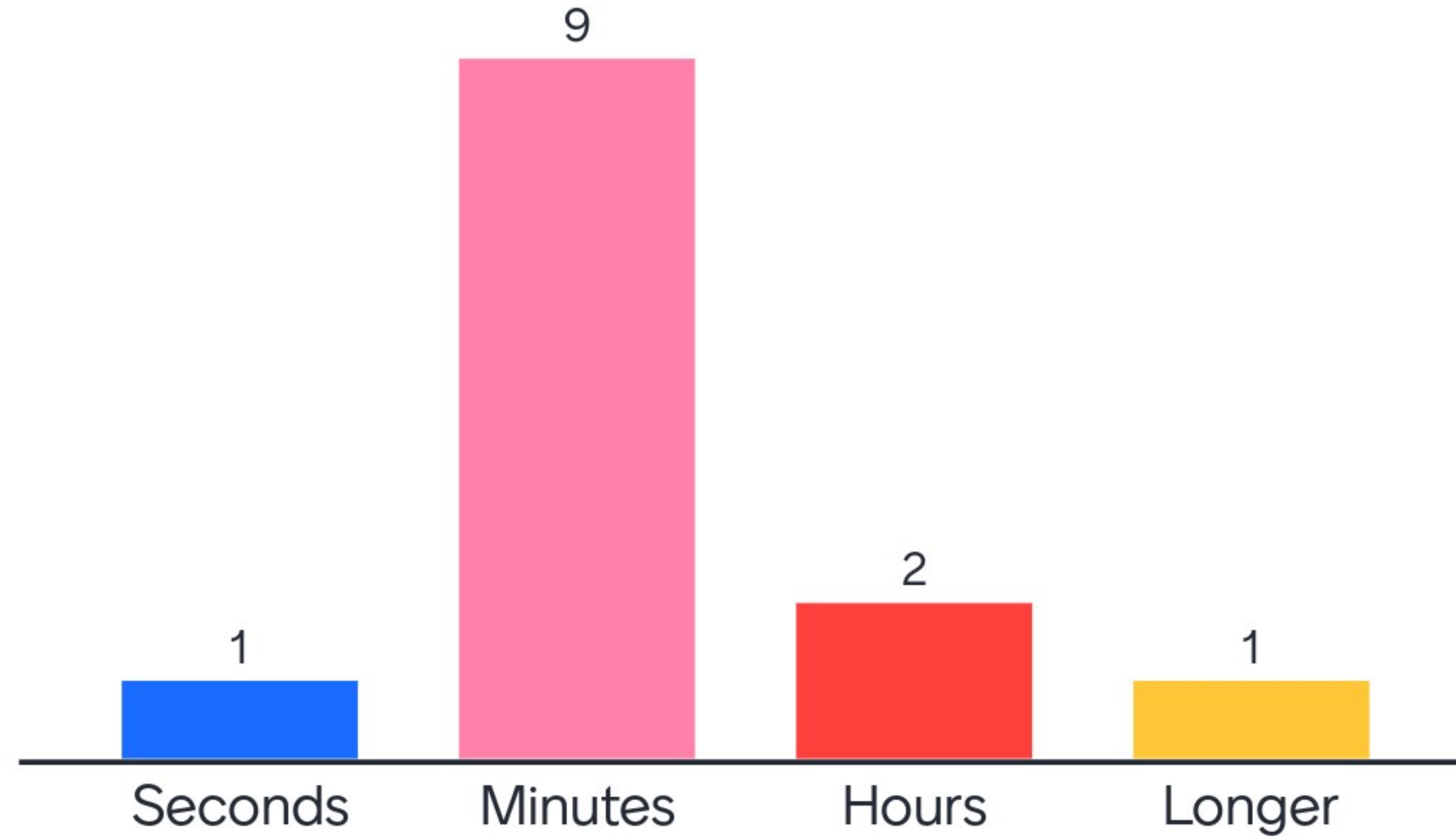
# Have you ever experienced GNSS failure?



# How often (if ever) have you experienced GNSS failures?



# Hoe long was the GNSS failure?



# How widespread was the failure?

Not sure

Regional

Galileo system failure was global

Don't know.

Apparently localised. (Port)

Don't know

Own ship

Regional

Localised - probable "white van"

# How widespread was the failure?

GPS system errors have been regional/hemispheric

Need lateral thinking to continue mission

Own vessel

Regional failure has been the worst though as a mariner you experience daily 'glitches'

Not sure. appeared localised, but we did not move from the vicinity during the failure

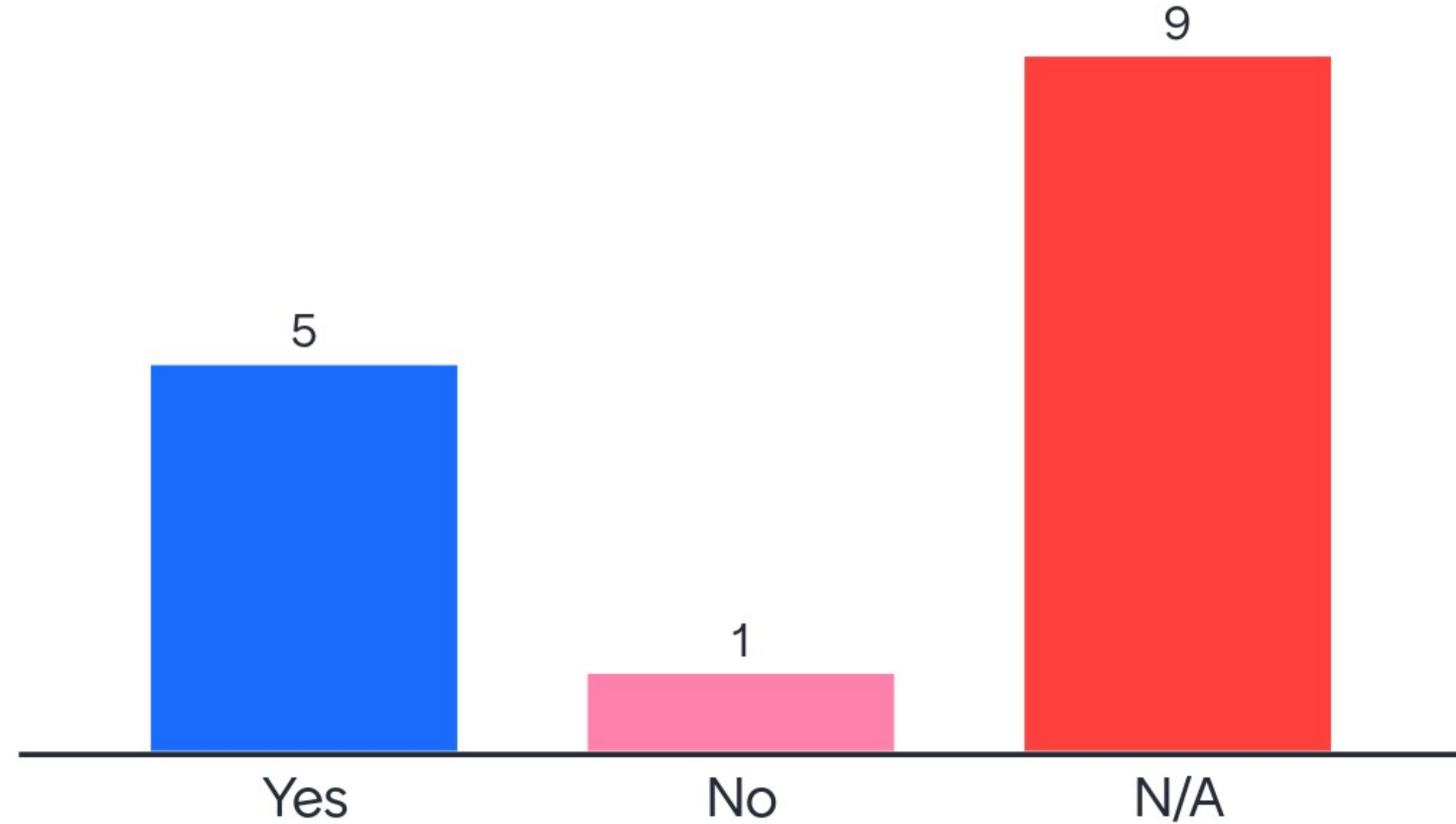
Never sure if it's operator error or system / equipment failure

Picnic

Just my yacht



# Has anyone experienced integrity failures?



# If yes, what was the technical impact?

Insufficient nav accuracy for mission

Minimal, we transitioned to alternative fixing methods

Had to look out of window

As integrity not routinely used in maritime, impacts challenging to quantify

As a mariner it is 'in your bloodstream' to suspect information given and adapt

Insufficient update to inertial systems

Erroneous GPS position on ECDIS

Unknown

Technical impact was an alarm and then using an alternative source to verify position

# If *yes*, what was the technical impact?

Na

None

# What was the financial impact?

Nil

NQ

NQ

None

Unquantified

None

NQ

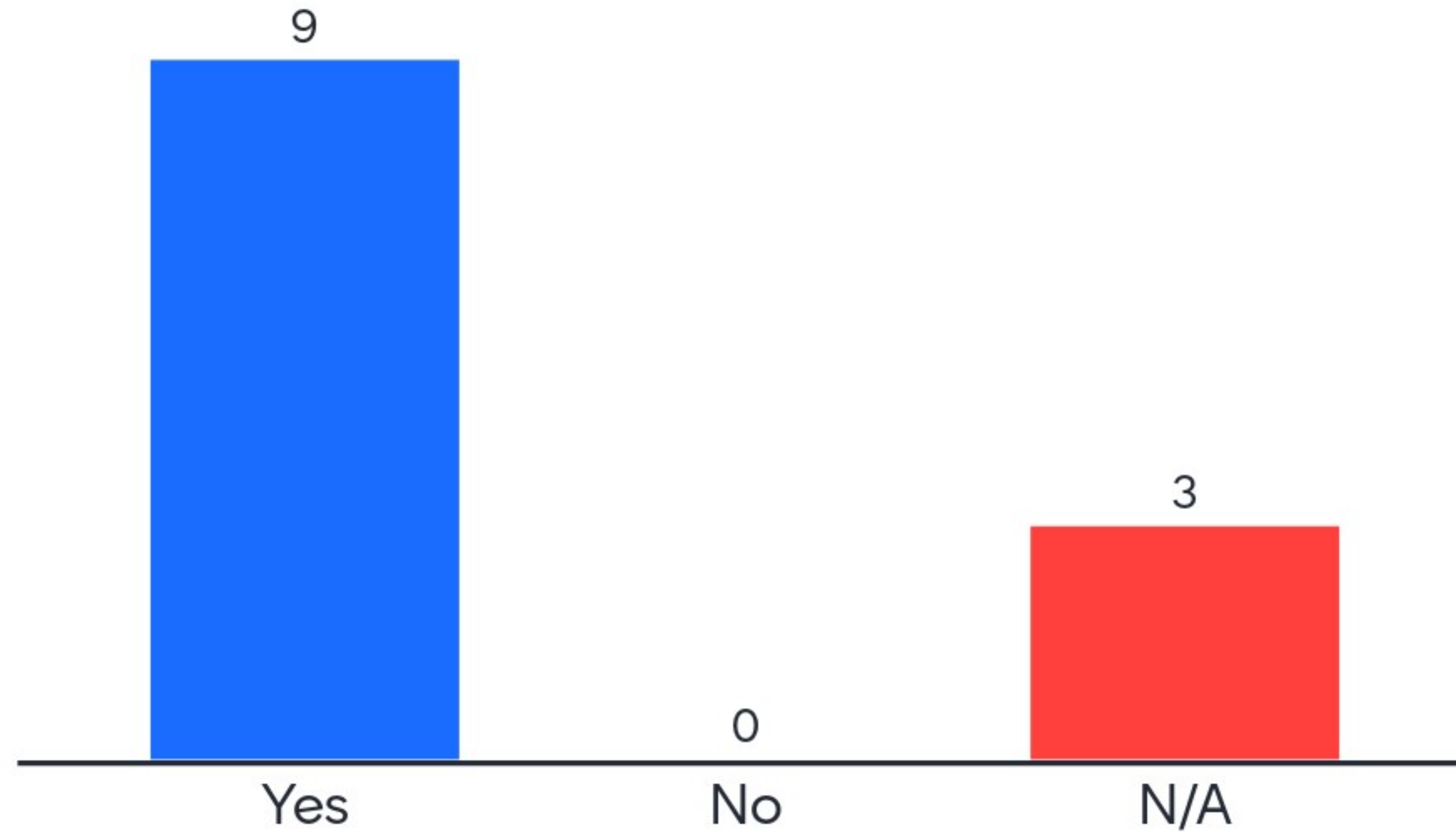
N/A

None

# What was the financial impact?

£4.26

# Does anyone take action beyond SBAS to improve integrity?



# If you are paying for better integrity, how much?

N/a

N/a

N/A

15k a year (RTK)

They pay me

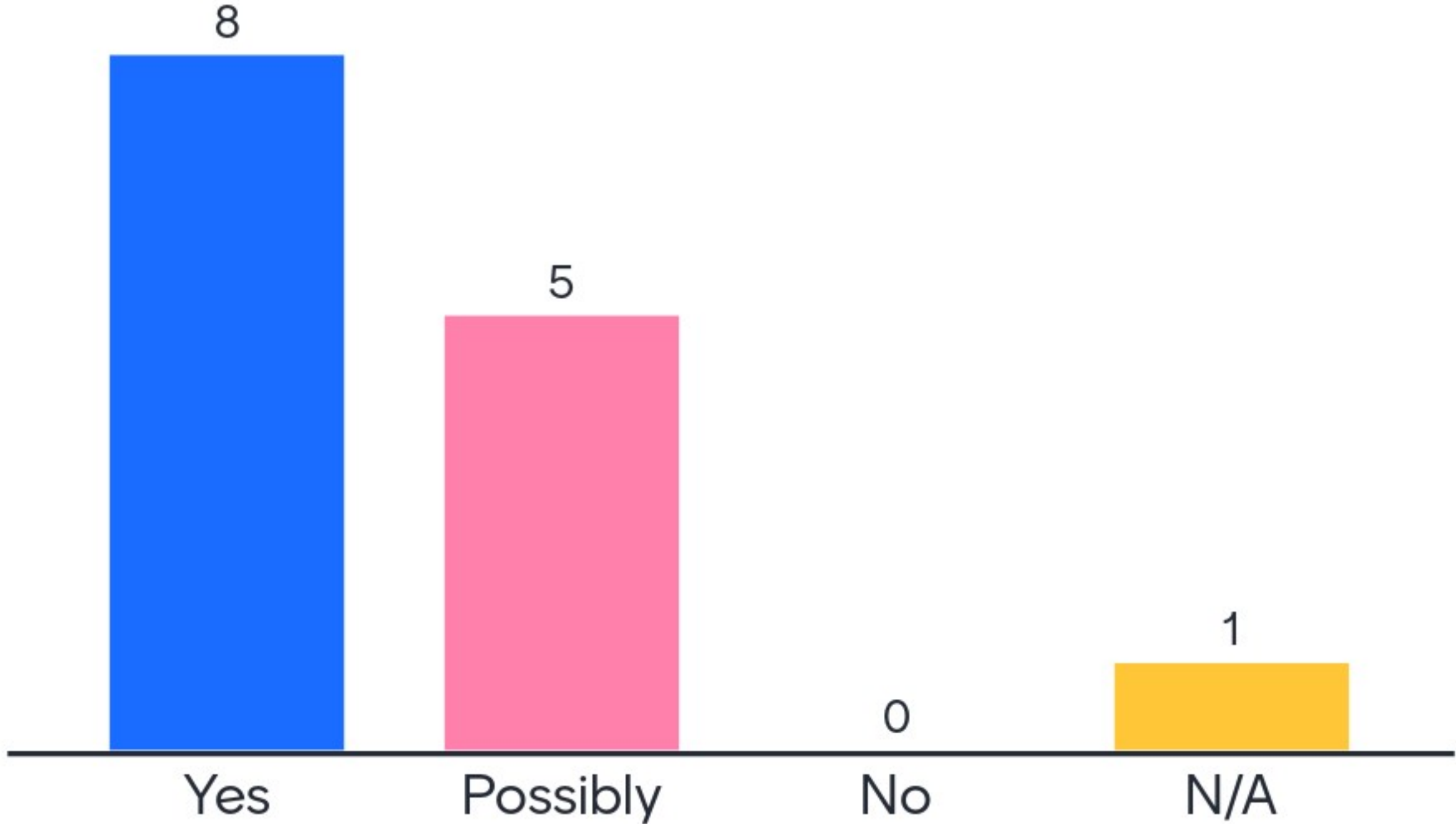
Should be included in system cost

Paying in staff training and skill so cannot be quantified

N/A

£3.67

# Would better integrity enable more efficient operations?





# If yes, what would better integrity enable?

Greater confidence

Autonomous navigation

More rapid decision making

Pilotage in restricted visibility

Trust leading to optimised operations

Mitigate human error

Room for maneuver

Understanding of risk

Confidently Squeezing more activity into a confined, high hazard space

# If yes, what would better integrity enable?

Confidence in connectivity.

System confidence

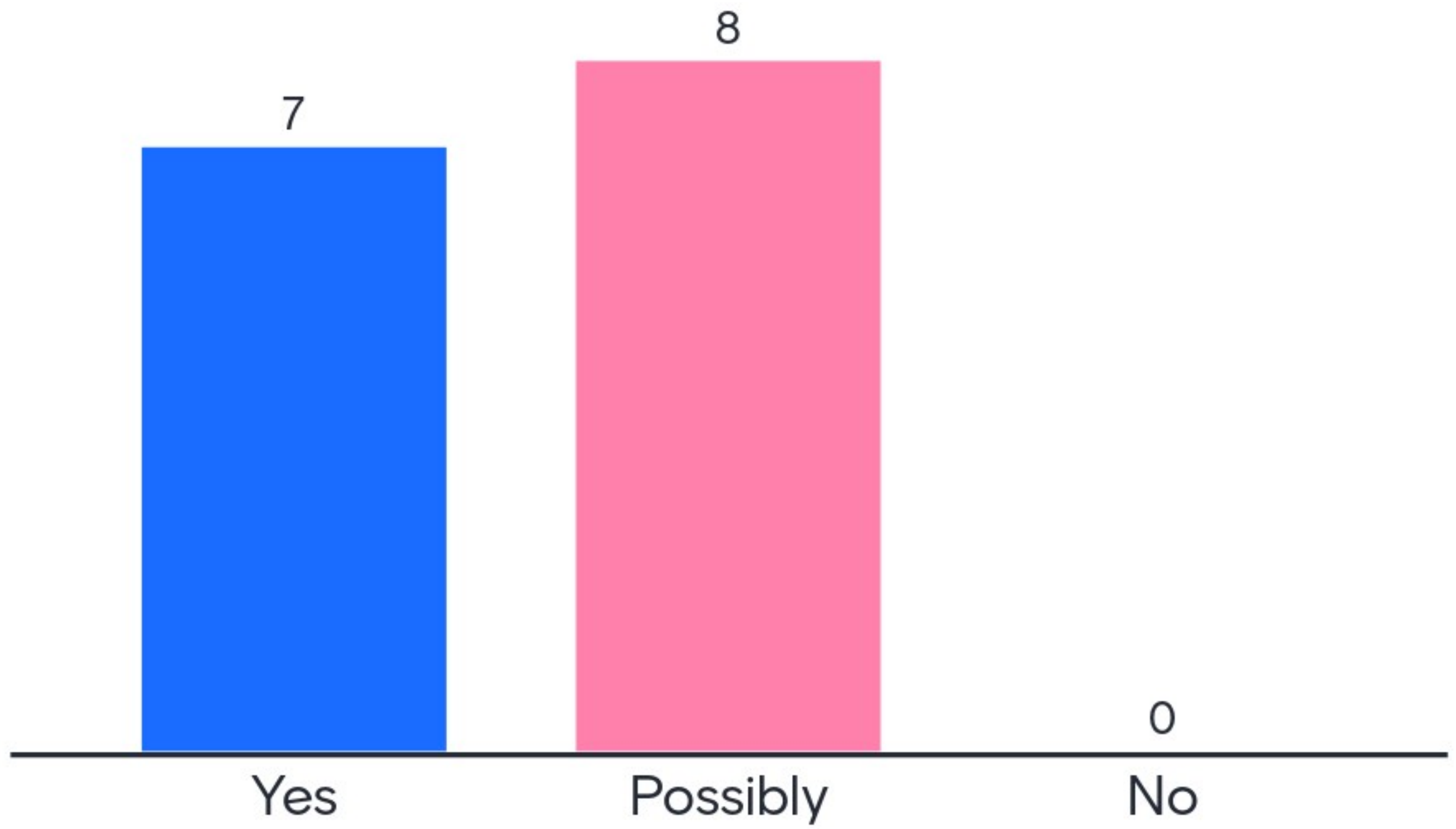
Longer at the ukkers table

MASS, greater efficiency, better situational awareness

Integration of crewed and uncrewed activity in the same (busy) space

What times lunch?

# Could an INSPIRe solution replace a commercial integrity source?



**Are there any other use case you would like considered?**



# Any other comments?

