



Audio Networking Horse Race 2017

# Adventures in audio networking

- 1998 - Our first audio networked project
- 1998 - Did we invent networked intercom?
- 1999 - Created the first networked self powered loudspeaker
- 2008 - Our first Dante project - largest at the time 148 channels
- 2009 - First hybrid Cobranet AND Dante network
- 2012 - Started researching industry networked audio use
- 2012 - First questions AVB's used in ProAV market
- 2015 - Started independent AES67 tests
- 2016 - Our first fully AES67 installation
- 2017 - Our first fully integrated voice alarm and IT network

# Audio networking use

**82%** had done at least one  
networked project

**Installation**

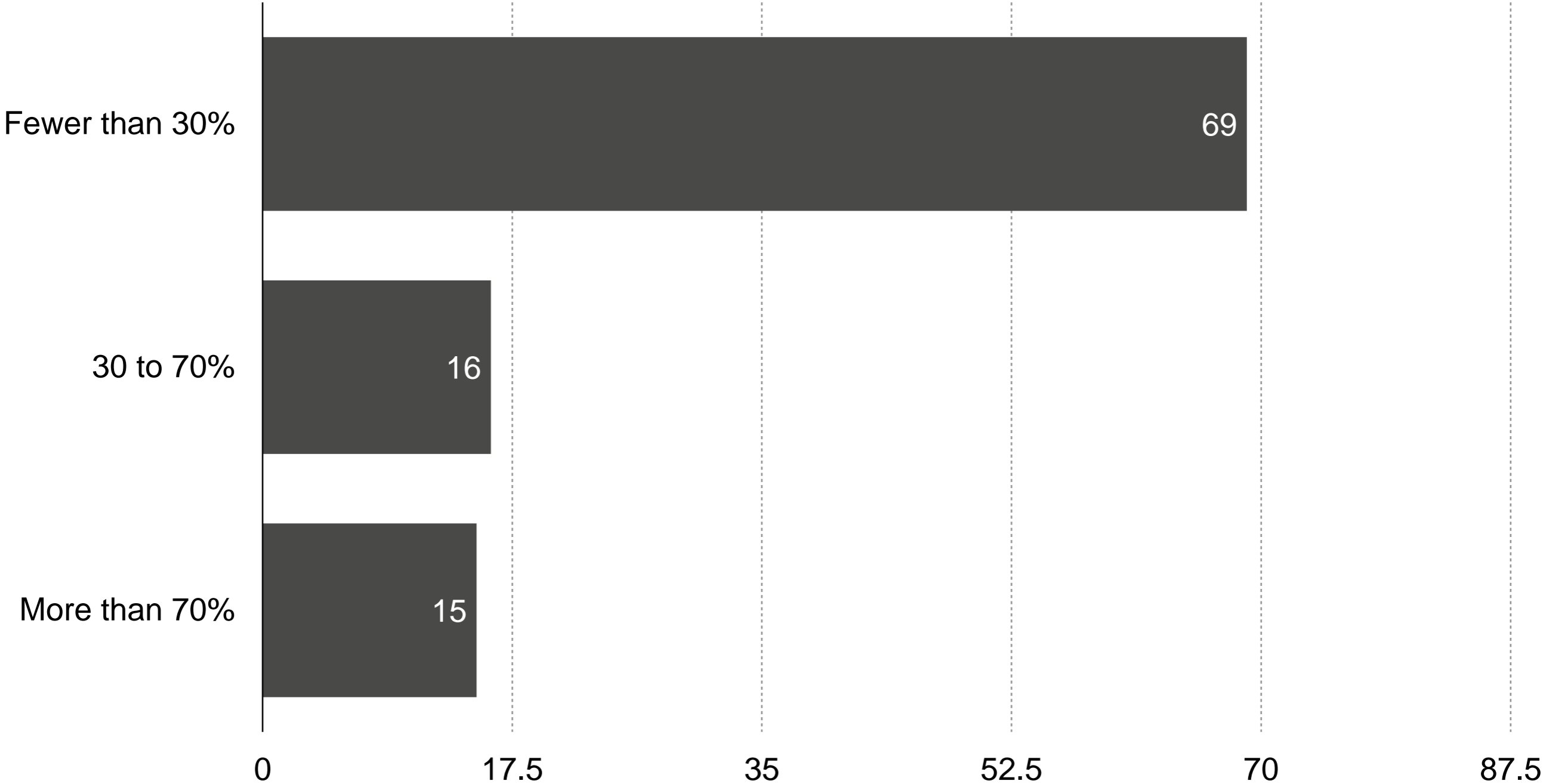
**ProAudioEast**<sup>Middle</sup>

**ProAudioAsia**

**scn**  
SYSTEMS CONTRACTOR NEWS

**Pro Tools Expert**

# How many projects combine with IT network?



(40% have never combined with IT)

# Full IT convergent system

- 20 equipment locations
- 6 PCs with controllers and touch screens
- 3 brands of amplifier to monitor
- Full voice alarm compliance
- Full integration with IT network
- Q-Lan and Dante streams and a RAVENNA node

# Project requirements

- A client who trusts you (or simply doesn't understand!)
- An enlightened IT manager
- An intelligent IT manager
- An IT manager who knows the role of IT
- We are the customer

# Is it audio over IT or IT over audio?

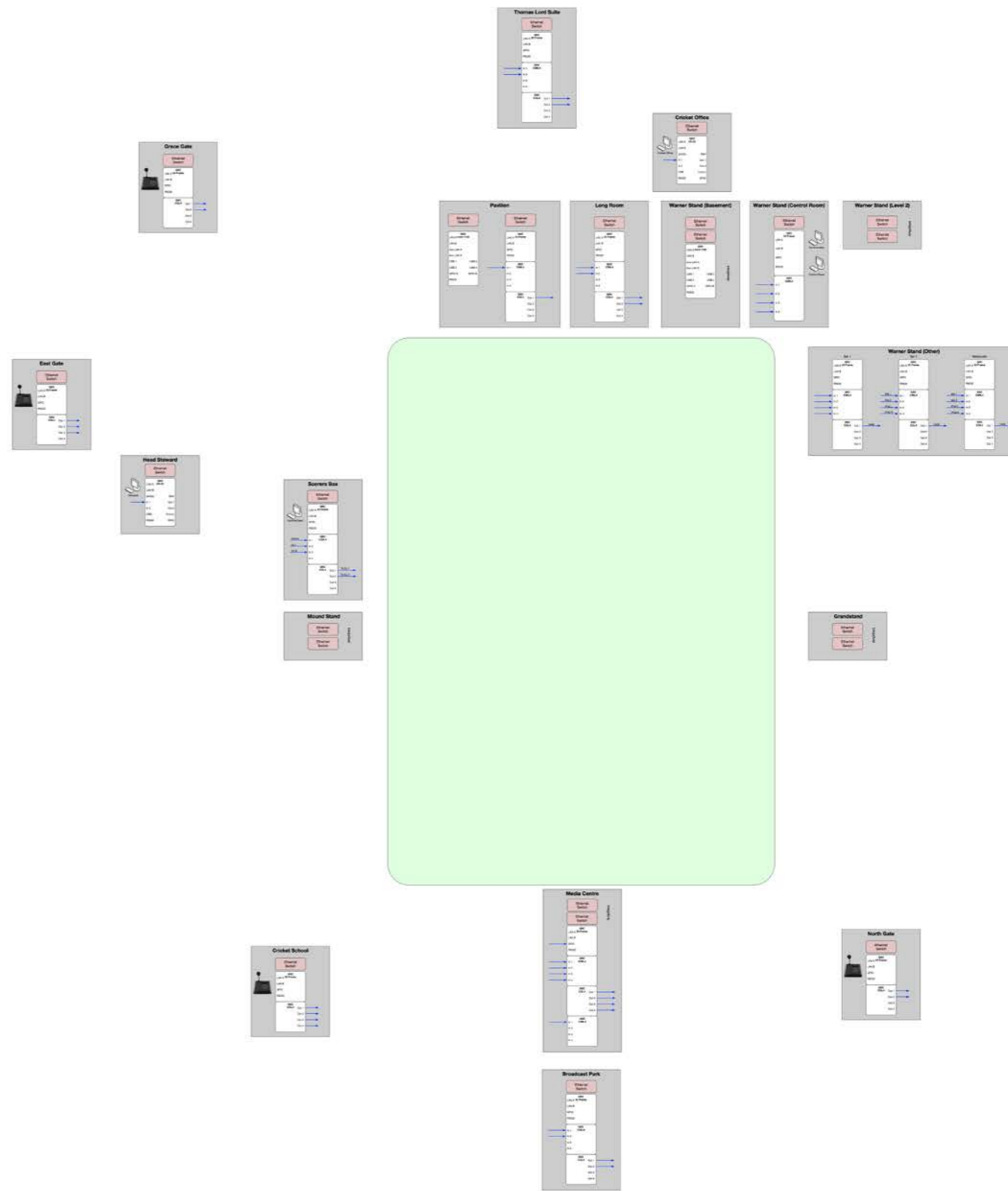
Whose network is it anyway?

- Define a critical signal path on the network
- Both audio and IT monitor network switches
- QoS, QoS, QoS
- IT sits on audio UPS

# Geek detail...

- 2 redundant networks
- 10 gig uplinks between switches
- 3 V-LANS - Control, AES67 and Dante





**OSG Equipment Totals:**  
 2 x Core 1100  
 2 x CDN64 Dante Card  
 13 x I/O Frame  
 11 x CMMA Input Card  
 13 x COL4 Output Card  
 32 x GB KIT Blank Card  
 2 x I/O-22  
 4 x PS-1600G

# Discuss

- All suppliers must commit to the AES67 firmware upgrade within 12 months

# Audio networking use

**Installation**

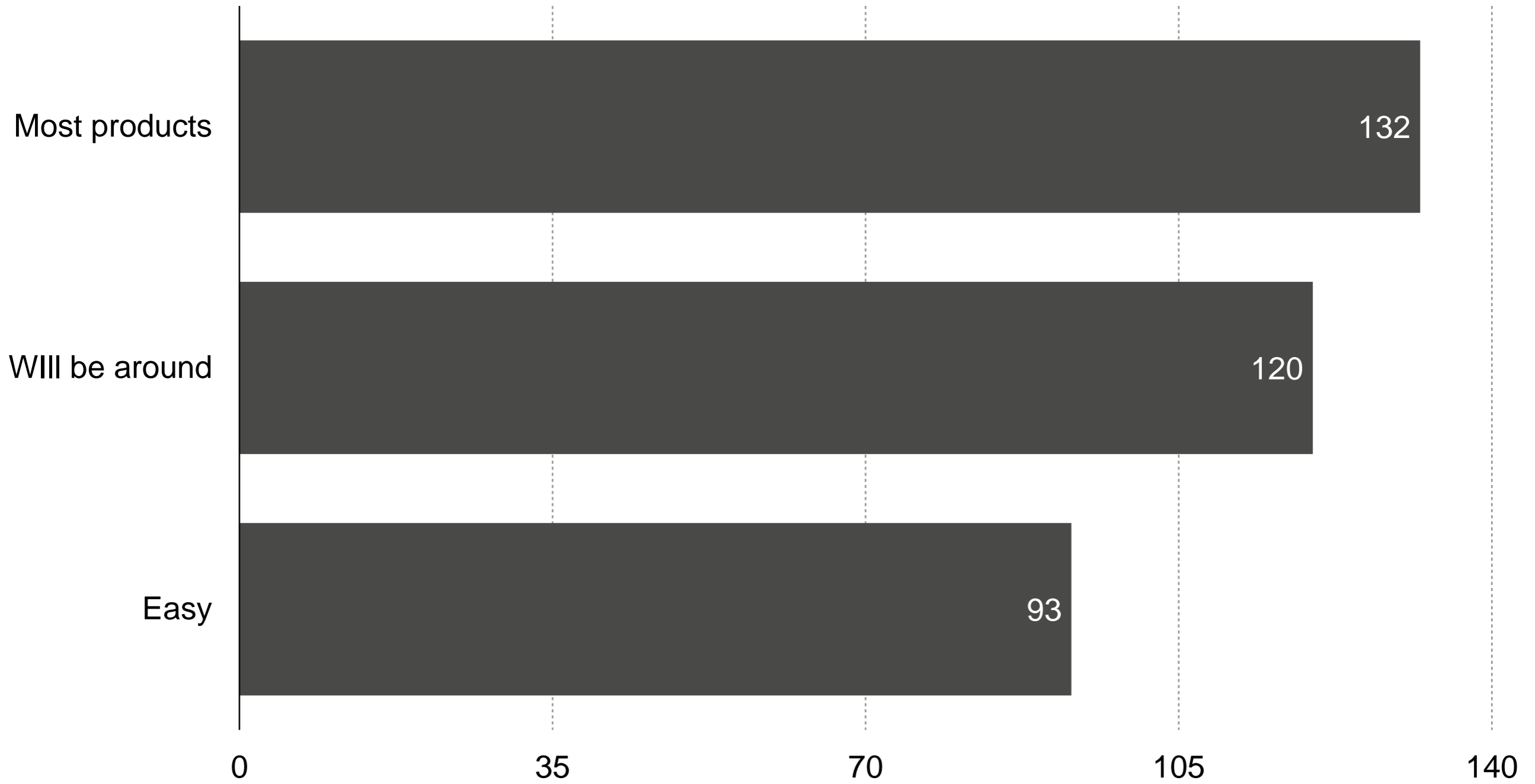


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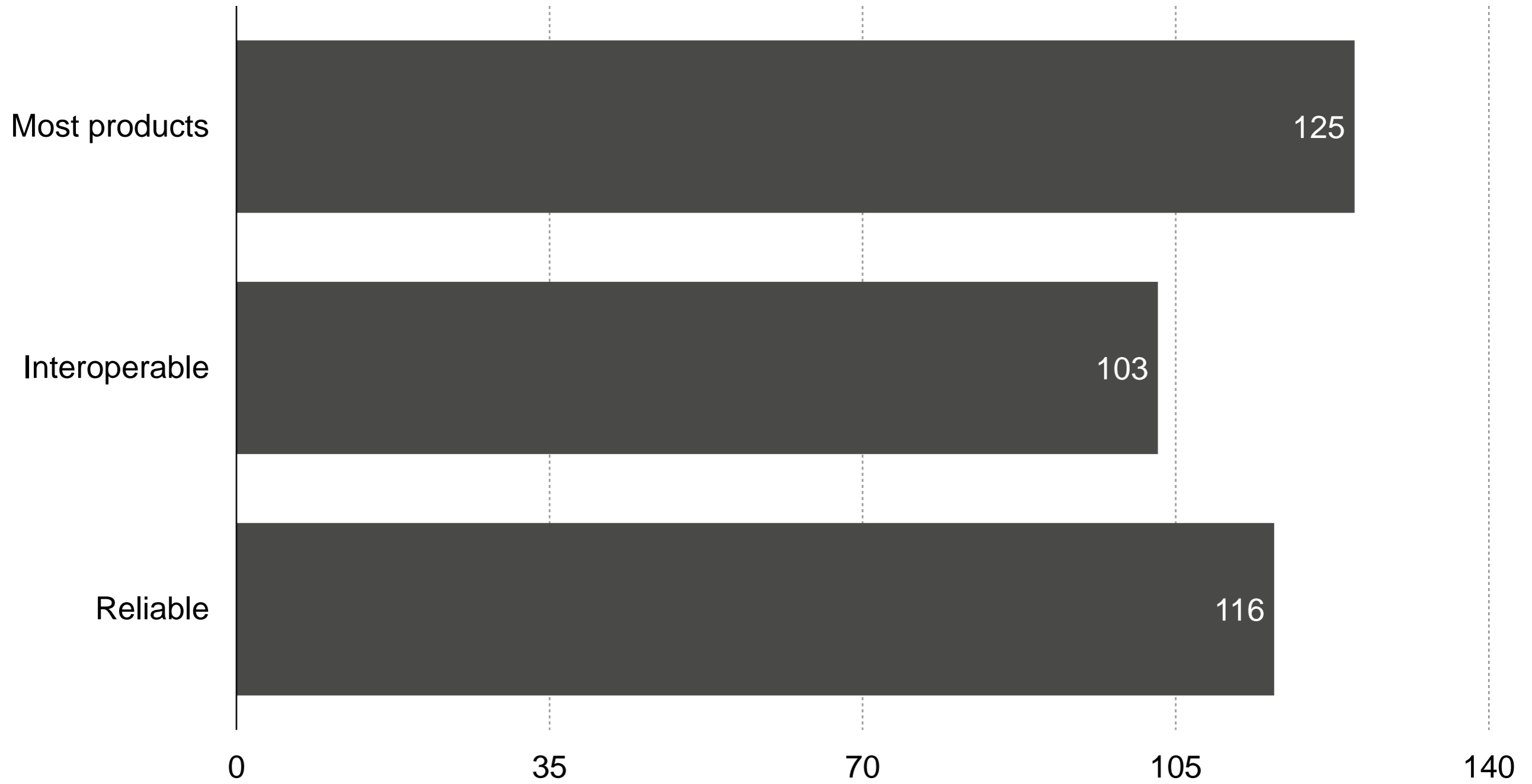
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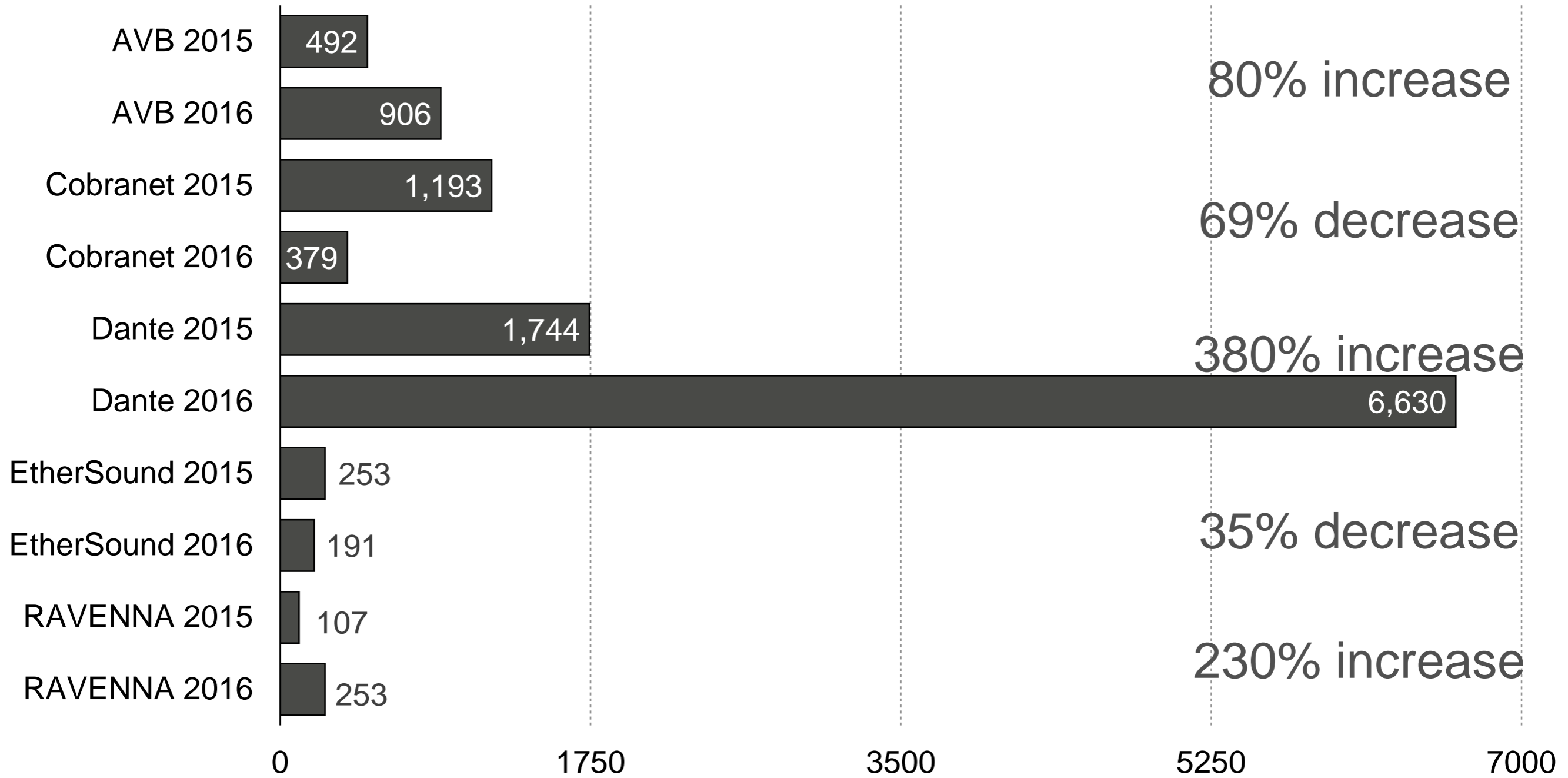
# Reasons for most used protocol?



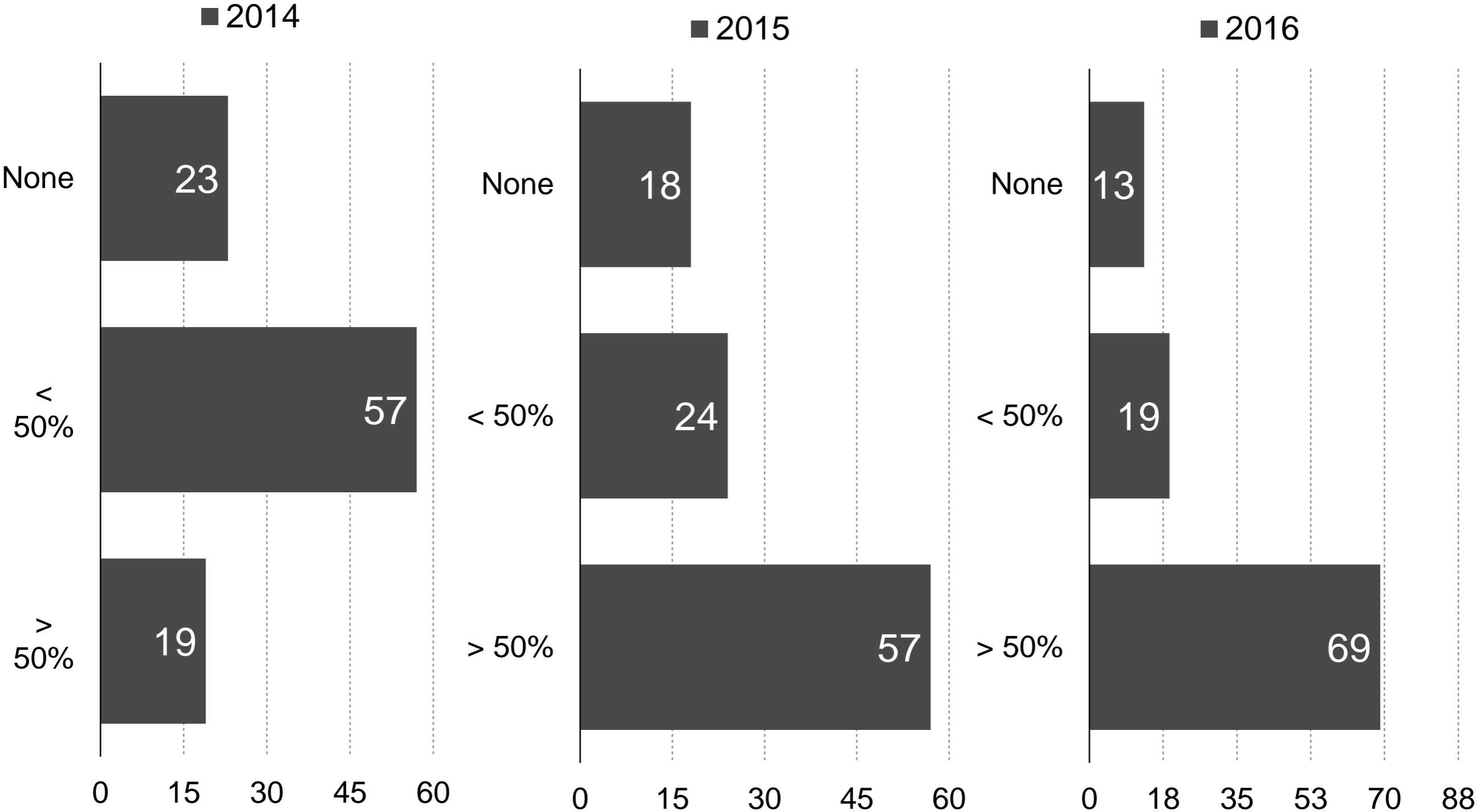
# Reasons for change to new protocol?



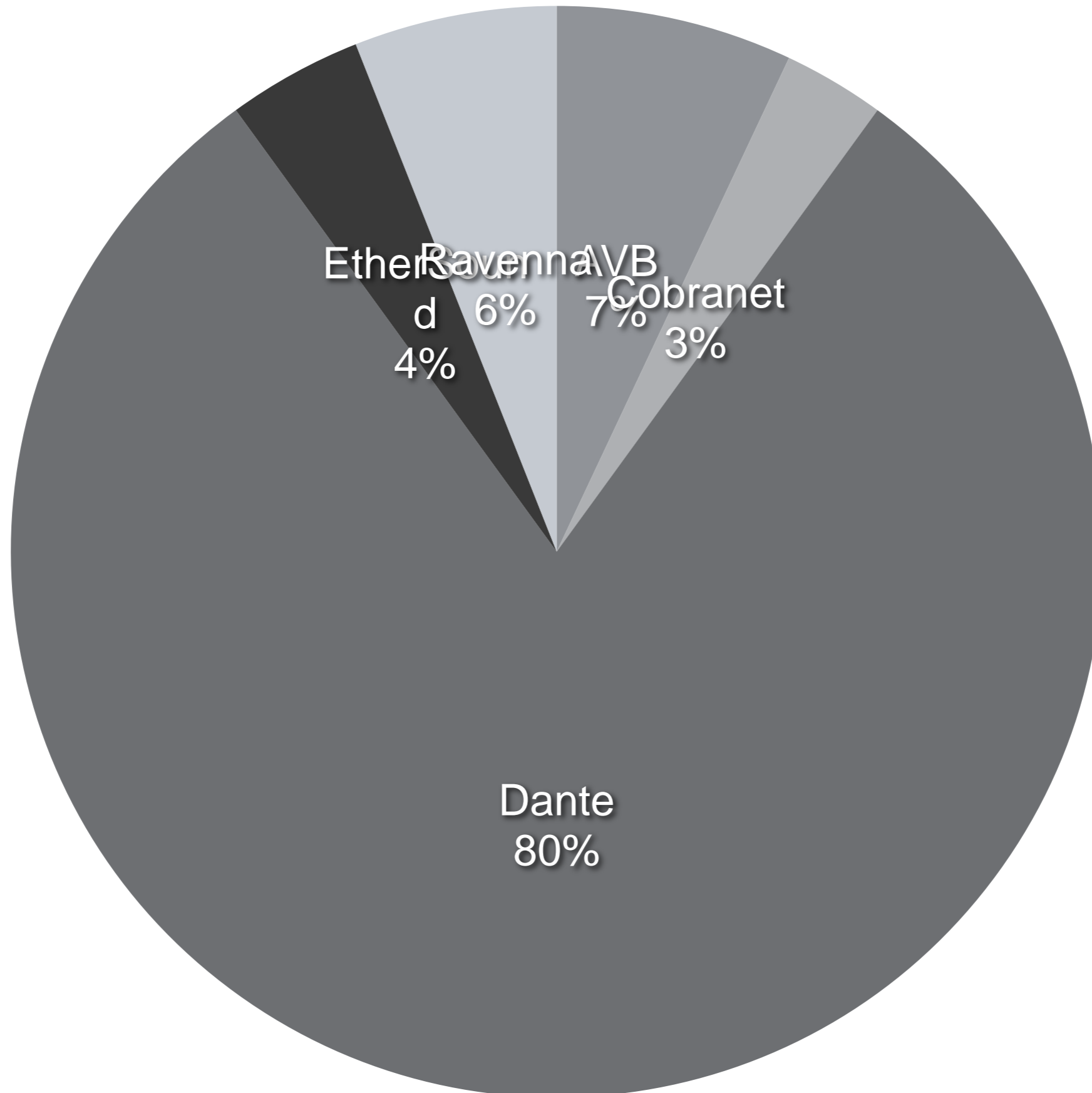
# How many projects using each protocol?



# More networked projects



# What protocol would non-networkers use?





# AVB

Product availability, switches, support

# CobraNet<sup>®</sup>

Old, latency

# Dante<sup>™</sup>

Proprietary

Ether  
**ES**  
Sound

Not needed, not supported, limited support

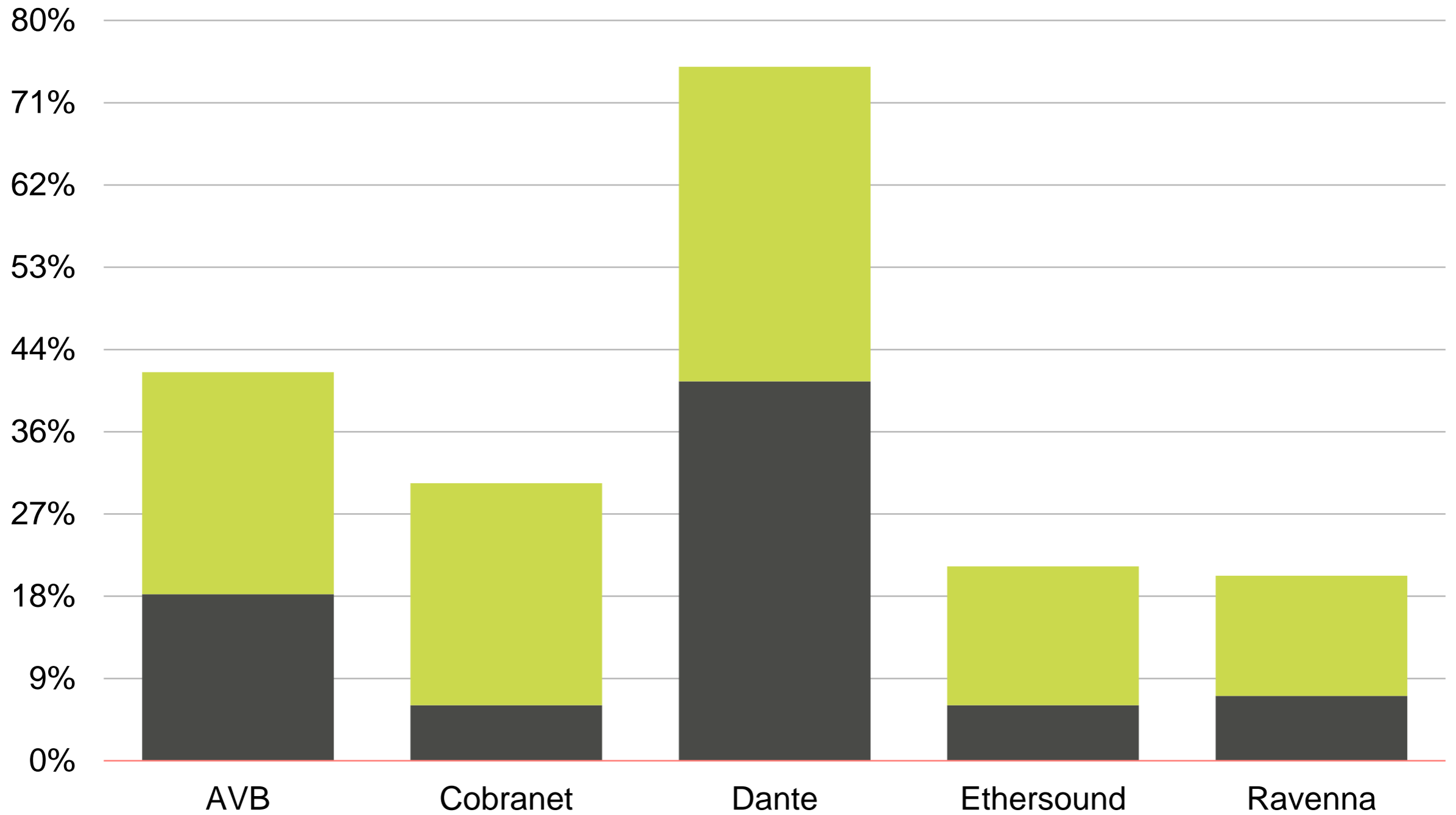
  
RAVENNA

Don't know it, broadcast only

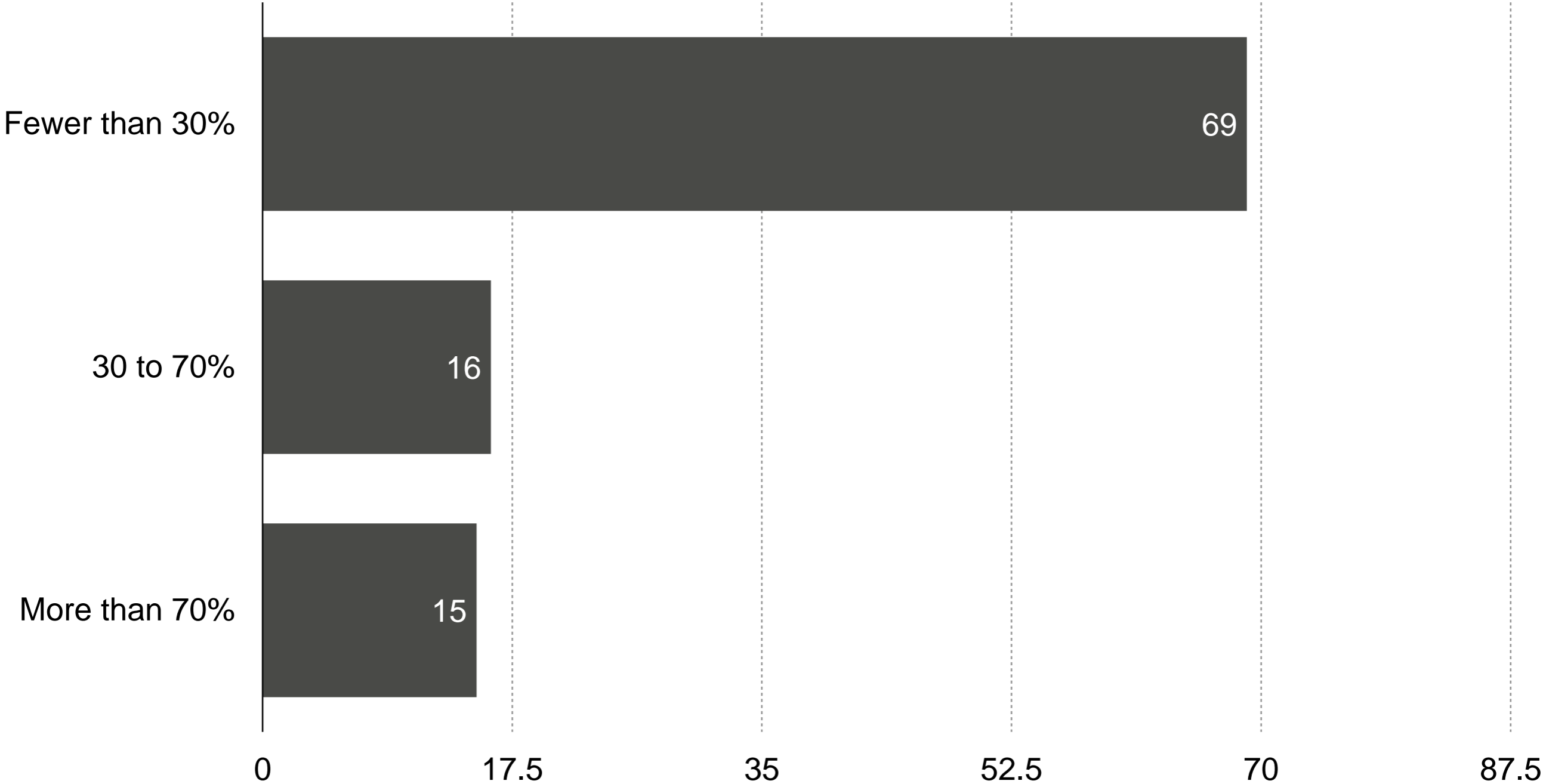
# Easy to use

■ Easy

■ Very Easy



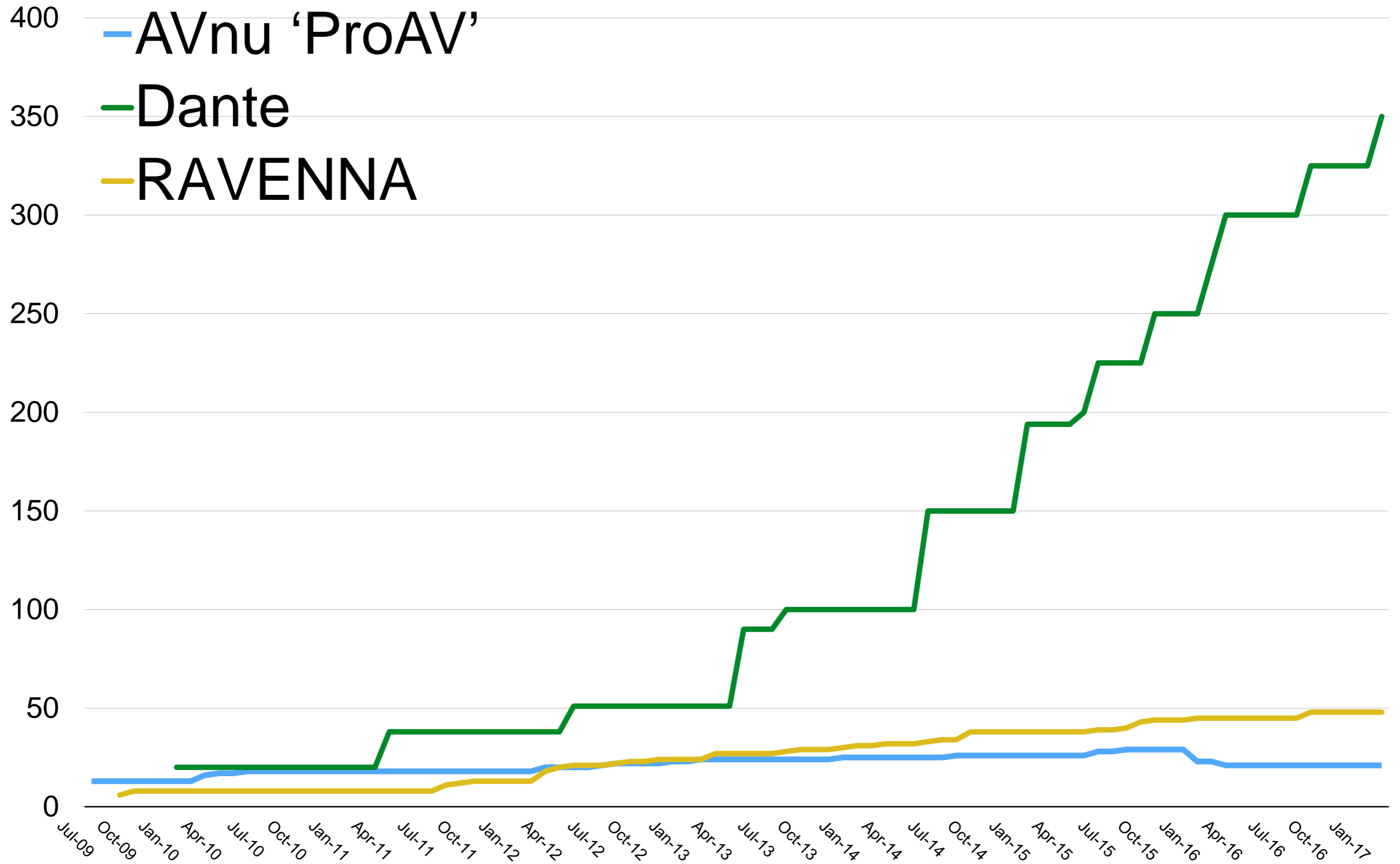
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And the numbers are ...

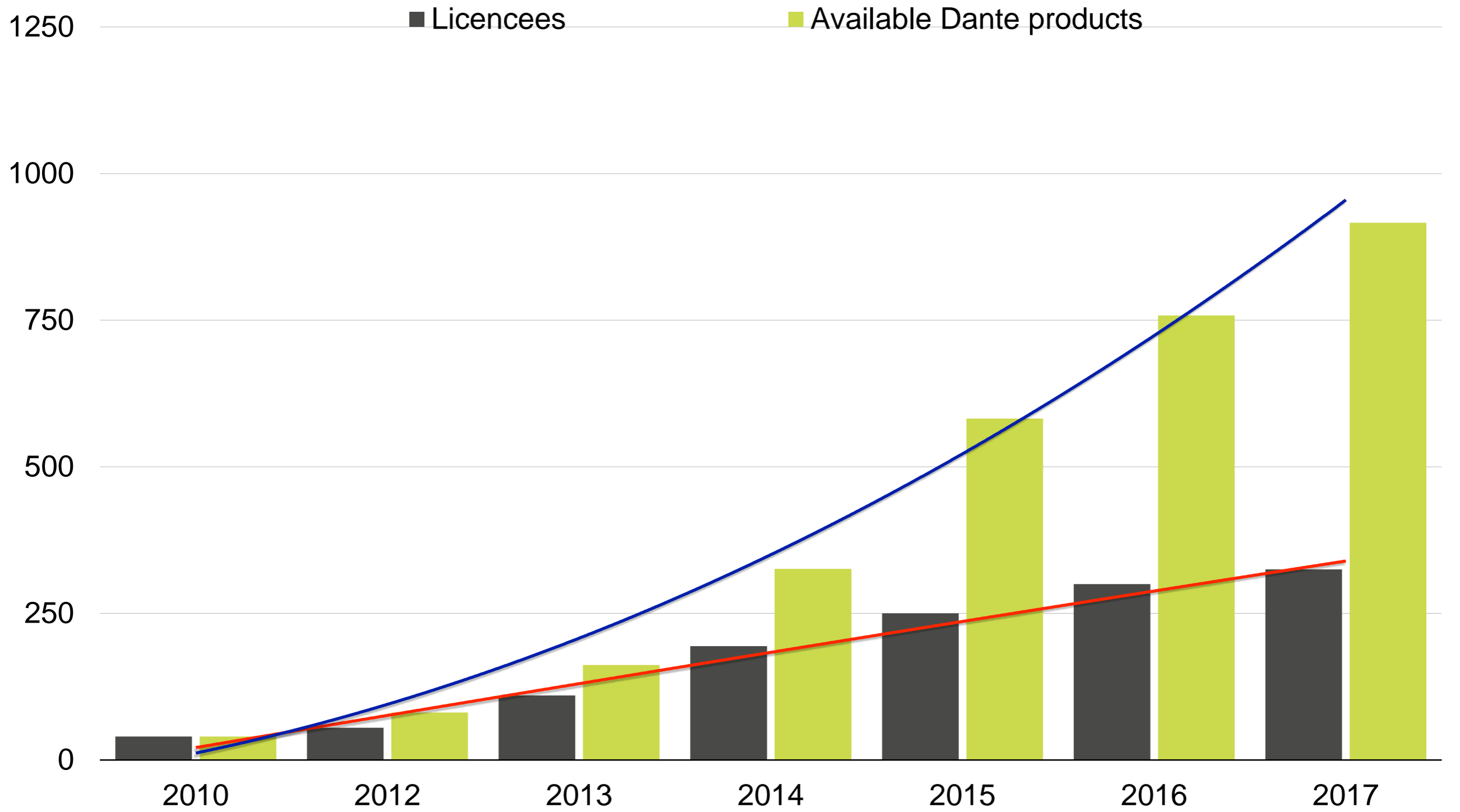
# Protocol licensees



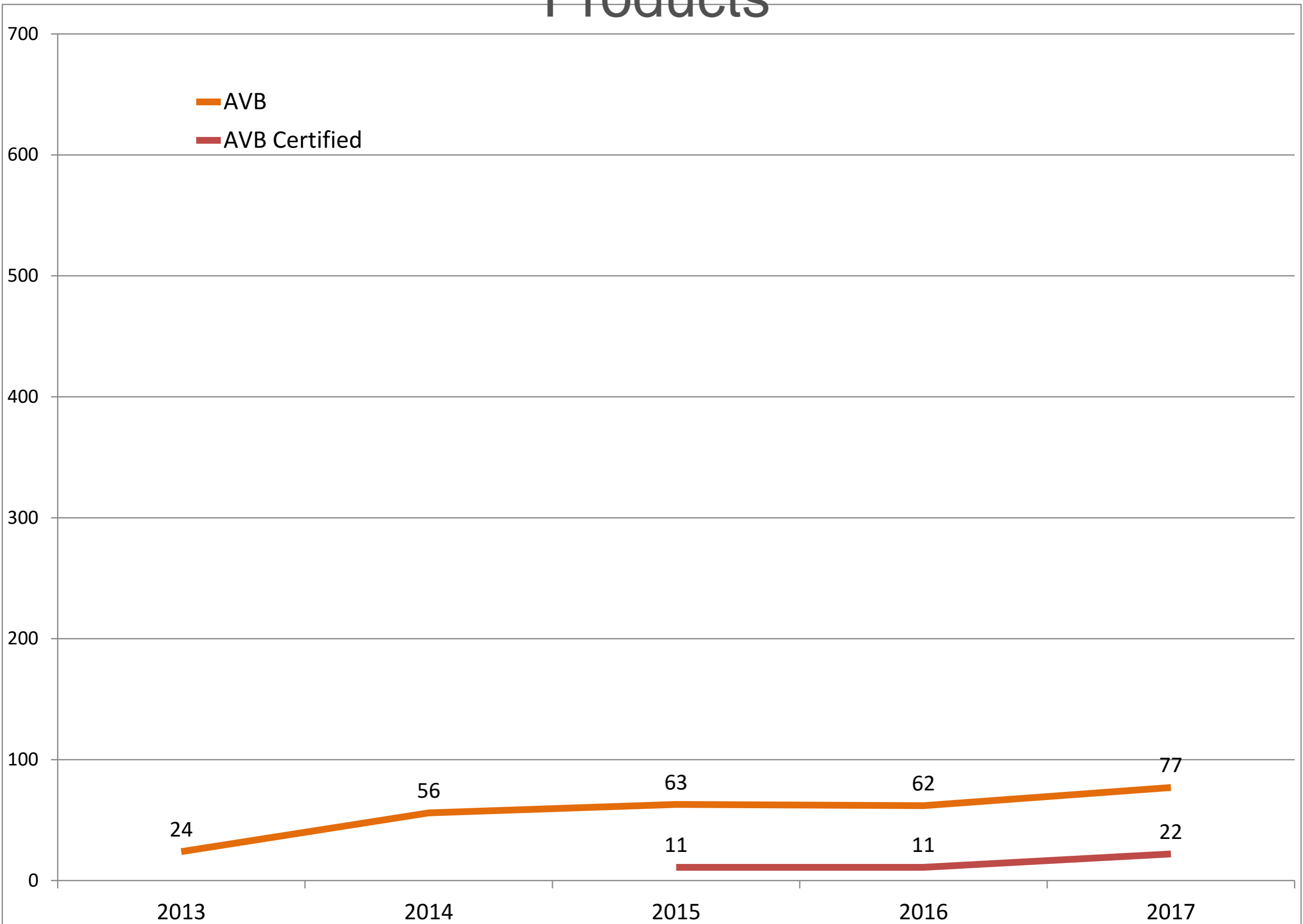
# The beer bet

- Available Dante products Jan 2015 - 296
- RHC Estimate for Jan 2017 - 758
- Available Dante products Jan 2017 - 793
- Available Dante products Feb 2017 - 916
- All Dante products February 2017 – 1008

# Dante product growth



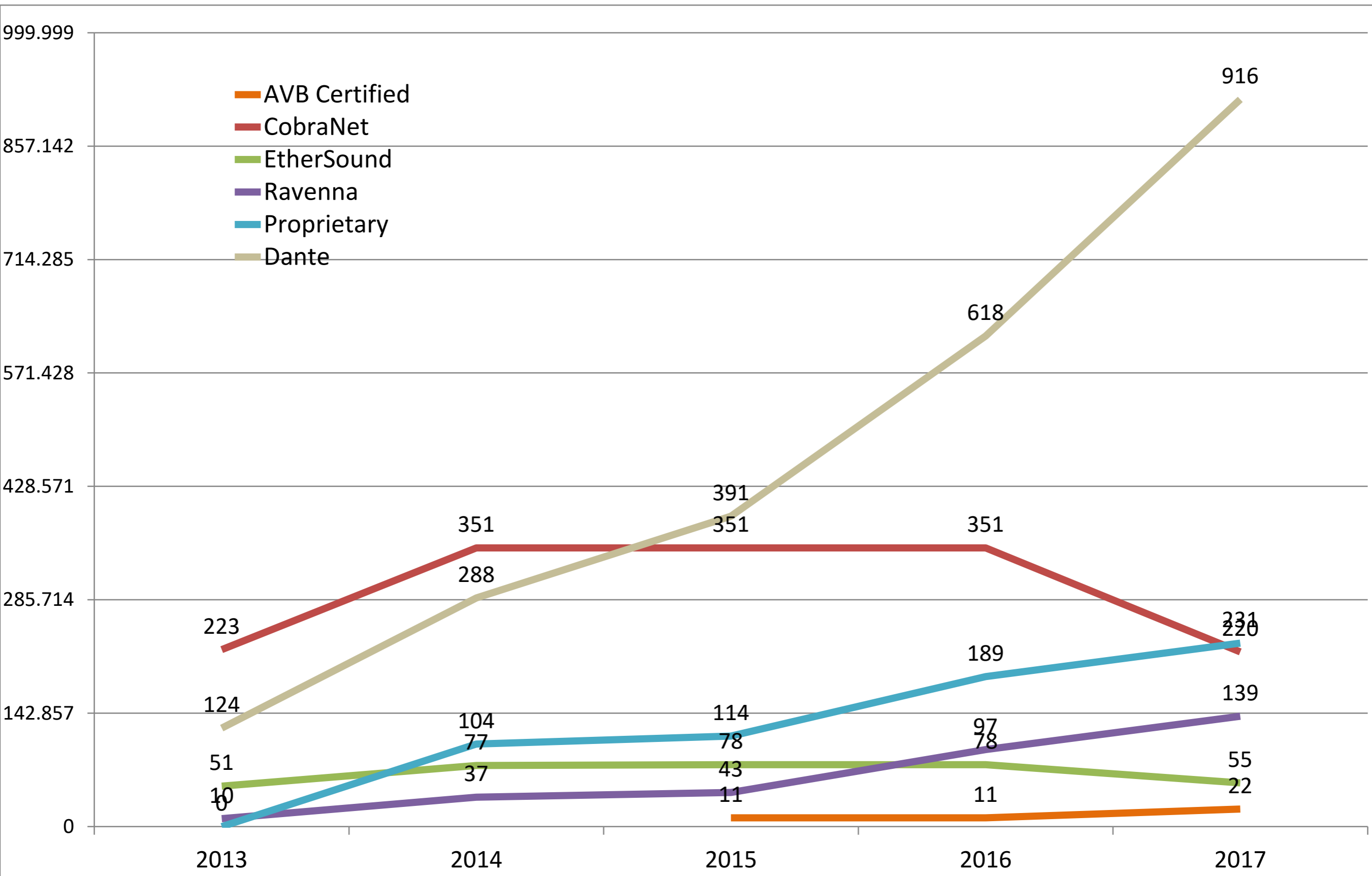
# Products





# Products

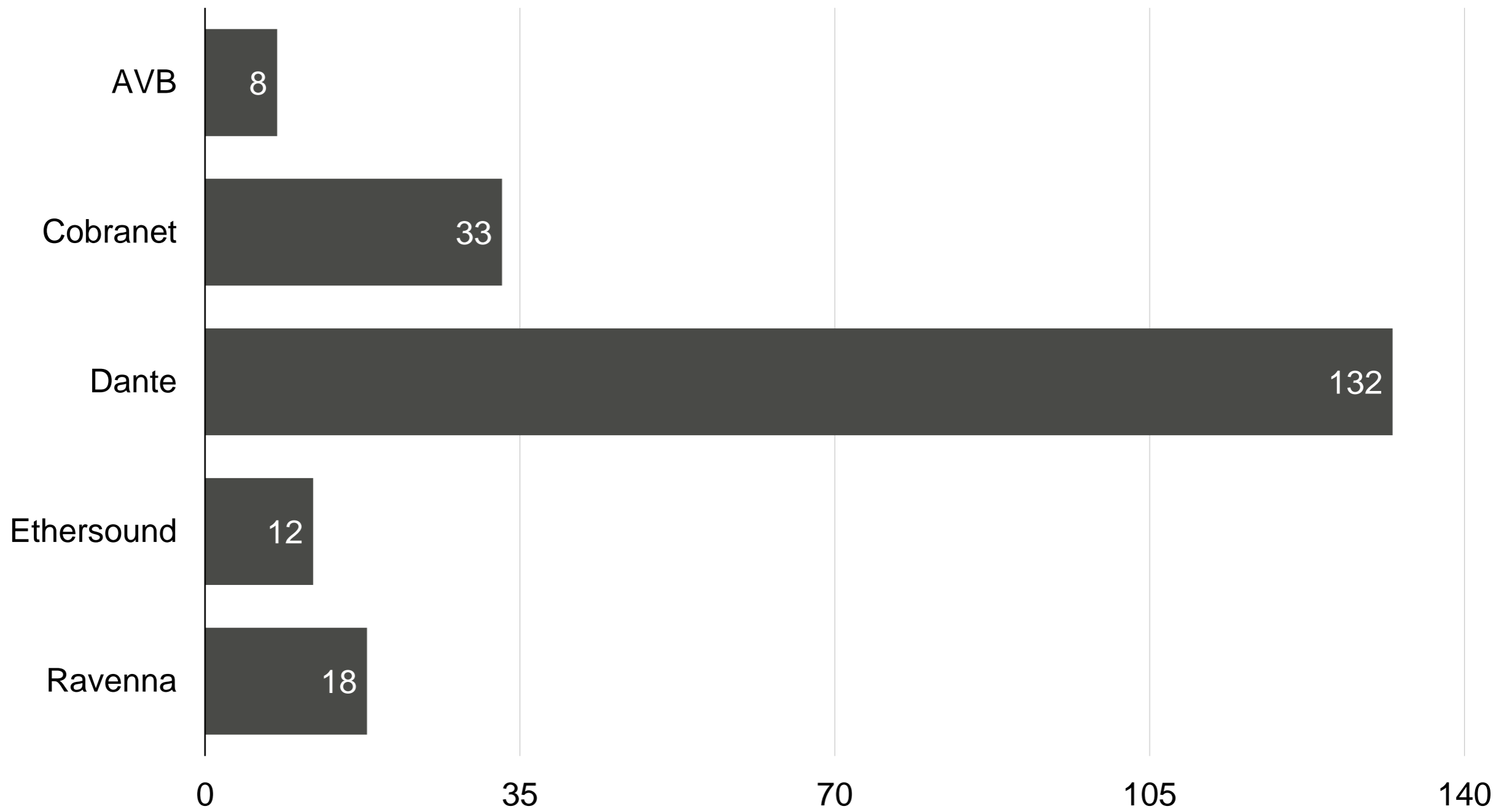
For explanation go to [www.rhconsulting.eu](http://www.rhconsulting.eu)

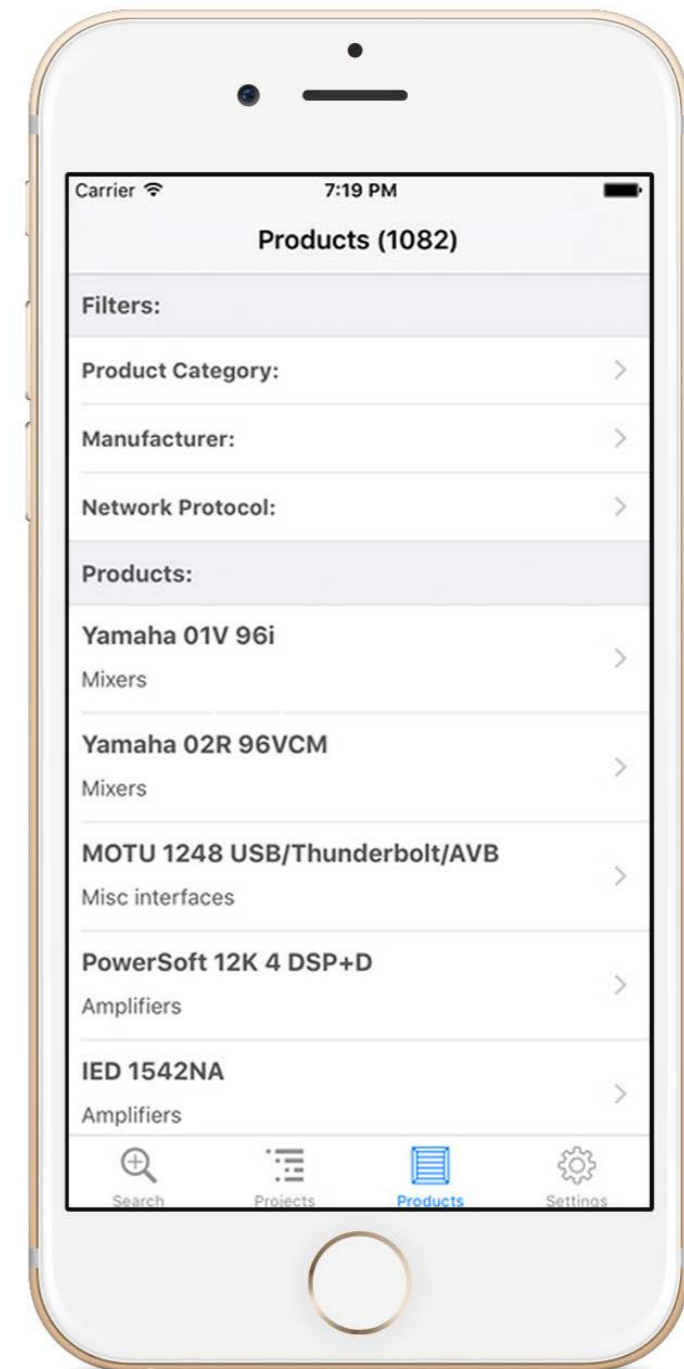


**We don't count interface cards**

# Manufacturer Ecosystem Activity

How many manufacturers shipping for each protocol?





[rhconsulting.eu/products](http://rhconsulting.eu/products)