



Comcast Innovation Fund

2020 ANNUAL REPORT

Summary of the Fund's Operations for the 2020 Operating Year

2020 Comcast Innovation Fund at-a-glance:

BACKGROUND

We know that innovation defines the future of our company, our industry and our connected world. Comcast is committed to fostering a culture of innovation that permeates every level of our business, and we've witnessed firsthand how some of the greatest breakthroughs occur when you simply give smart people the time and resources they need to innovate.

The Comcast Innovation Fund was established to support researchers, technologists, and academics who are committed to the betterment of the Internet and the global technology and policy community.

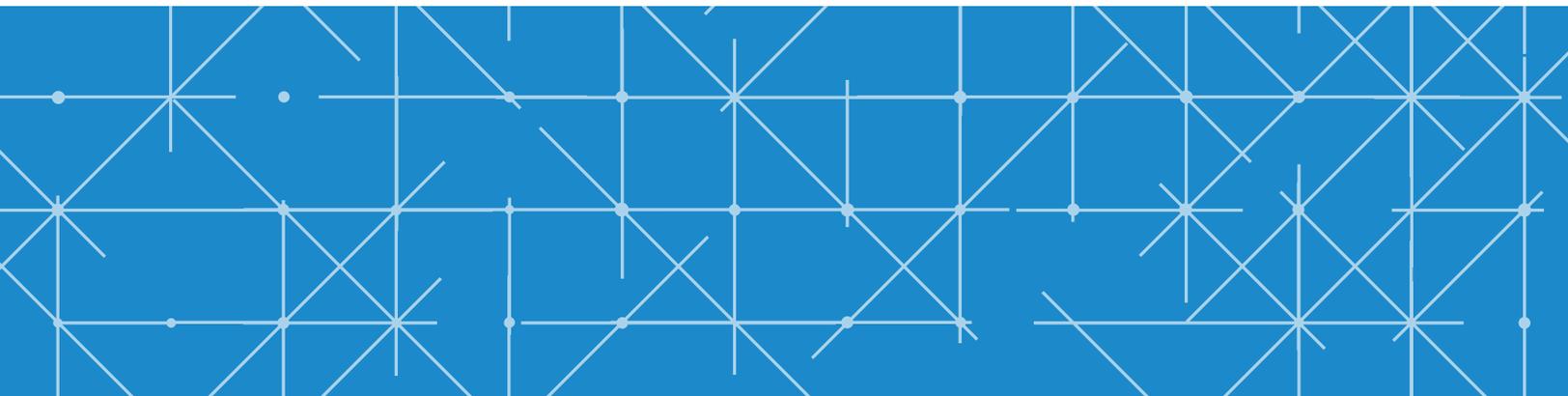
Grants range from \$3,000 for smaller projects, up to more than \$100,000 for medium-term research efforts. A cross-functional team of technology and business leaders within Comcast reviews grant applications and directs funding where it is most needed and can have the greatest impact.

In 2020, we funded 17 grants from a large pool of worthwhile applications. Since the Fund's inception in 2013, Comcast has supported 162 projects from researchers in 15 countries around the world. We've been inspired by the results of this research and are committed to continuing the program into the future.

FOCUS ON IMPACT

Through the innovation fund, we focus on small and mid-sized projects that may slip between the cracks of traditional research funding sources. The multidisciplinary team of subject matter experts that review applications look for research projects that move technology forward by tackling difficult problems or pioneering new approaches. In 2019, particular weight was given to projects that:

- Address cybersecurity, safety, and privacy threats that face our customers and our services.
- Create or advance important open-source projects.
- Advance the development and adoption of emerging open Internet standards, as well as the transition from legacy to IP technologies.
- Improve the accessibility, operational stability, security, growth, and impact of the Internet.
- Improve the technical community's understanding of the Internet, transparency, and the customer experience via better measurement technologies.
- Advance and improve the customer experience of our services, and contribute to the creation of better products.



GRANT TYPES

We fund research grants, open-source development grants, or a combination of the two.

- **Research Grants** – Unrestricted grants supporting research in a range of Internet-related fields that support researchers, technologists, and academics. These grants support researchers and targeted research projects, usually at colleges and universities.
- **Open Source Development Grants** – These grants are intended to support the creation and/or advancement of open source projects of interest to Comcast or of benefit to the Internet and broadband industries, including those that may not have immediate business value but that carry the potential for important technological development.

2020 GRANTS BY COUNTRY

 Czechia 1

 Singapore 1

 USA 15

2021 GRANT FOCUS & HOW TO APPLY

We accept proposals throughout the year until our annual funding has been fully committed. To apply, visit the Innovation Fund web site at <https://innovationfund.comcast.com/>. For 2021, we are continuing to consider all application areas but are particularly interested in applications related to the effects of COVID-19 on the Internet.



About Comcast: Comcast Corporation (Nasdaq: CMCSA) is a global media and technology company with three primary businesses: Comcast Cable, NBCUniversal, and Sky. Comcast Cable is one of the United States' largest high-speed internet, video, and phone providers to residential customers under the Xfinity brand, and also provides these services to businesses. It also provides wireless and security and automation services to residential customers under the Xfinity brand. NBCUniversal is global and operates news, entertainment and sports cable networks, the NBC and Telemundo broadcast networks, television production operations, television station groups, Universal Pictures, and Universal Parks and Resorts. Sky is one of Europe's leading media and entertainment companies, connecting customers to a broad range of video content through its pay television services. It also provides communications services, including residential high-speed internet, phone, and wireless services. Sky operates the Sky News broadcast network and sports and entertainment networks, produces original content, and has exclusive content rights. Visit www.comcastcorporation.com for more information.

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Individual Grant Listing



AltaStream

Quality-Aware Streaming Implementation for dash.js



DNS Operations, Analysis & Research Center (DNS-OARC)

Upgrade DNS File Storage Platform



CZ.NIC

DNS Shotgun: Realistic DNS Resolver Benchmarking for TCP/TLS/DoH Protocols



Princeton University

Learning Caching Algorithms for Video Distribution in Content Delivery Networks (CDNs)



Greenstand

Tree Tracker Data Pipeline



Saint Louis University

Network Performance Verification and Diagnostics Using Super-Resolution Techniques



Indiana University

Towards a Private and Secure DNS



Stanford University

Systems and Analytical Foundations to Regain Visibility into Network Traffic



Internet Security Research Group

Building a Memory-Safe DNS Resolver



Teklibre

Accelerating Active Queue Management (AQM) Adoption in the Real World



Julia Kim

Grant Impact Reports



University of Chicago

Longitudinal Traffic Ratio Trends in Service Provider Networks



Massachusetts Institute of Technology

Speed Measurement Research



University of Connecticut

Surveying Hardware Root of Trust Implementations



MulticoreWare

PC-based Versatile Video Coding (VVC) Encoder Open Source Development



US Ignite

Philadelphia as a Smart Gigabit Community



DNS Operations, Analysis & Research Center (DNS-OARC)

DNS over HTTPS (DoH) support for dnsperv Open Source Software