



Ookla's Coverage Metrics describe the user's mobile experience with their cellular network. Coverage Score™ incorporates a measure of each provider's service and footprint within the country. See next page for more detail.



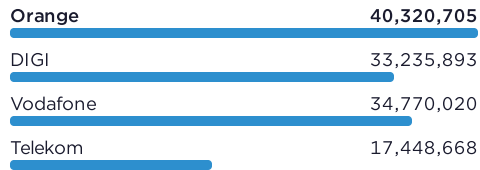
633

Coverage Score

Coverage Score

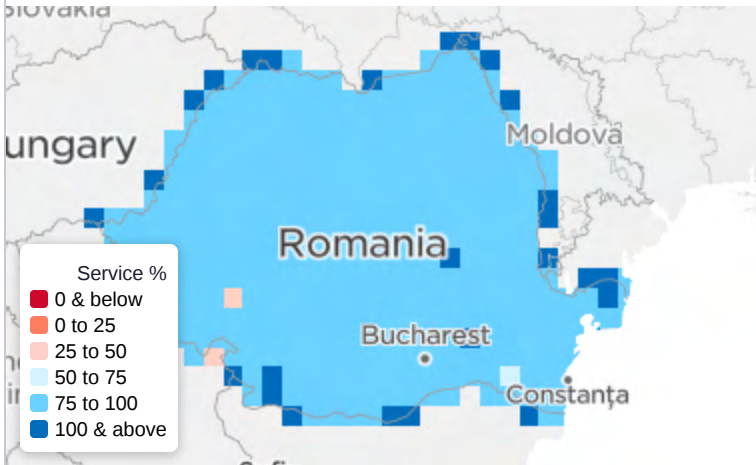


Scan Counts



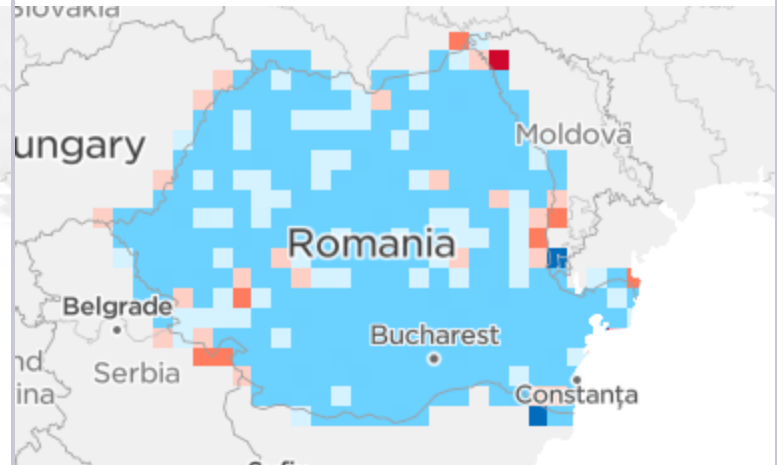
### Orange's General Service

Places that showed general service within the country.



### Orange's 4G Service

Places that showed 4G service within the country.



## Coverage Statistics

154,815,110

Scan Count

411,916

Total Locations Observed

410,228

Locations with Service

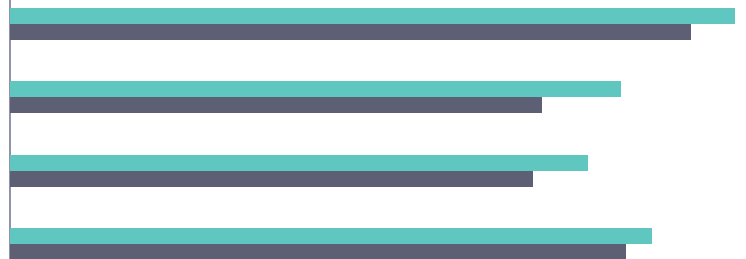
391,408

Locations with 4G

208,078

Device Count

Carrier	Total Locations Observed	General Service	4G Service
Orange	269,747	268,971	252,621
Vodafone	226,995	226,550	197,207
Telekom	216,157	214,503	194,070
DIGI	239,006	238,157	228,429



## How Coverage Score Works

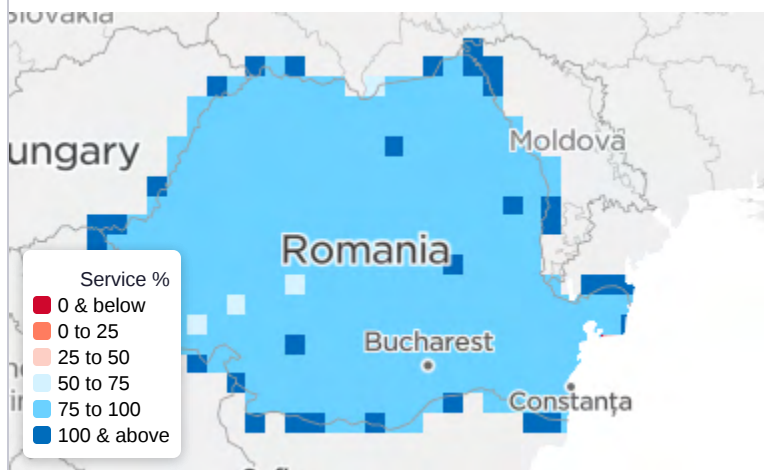
Ookla's Coverage Score captures both the number of locations in which an operator offers service (its footprint) and the quality of service in each location. Metrics are calculated using locations where coverage scans were contributed by Android Speedtest users. A location is an area that is equivalent to approximately 100 x 100m (about the size of a New York City block). To minimize the impact of misconfigured or underperforming devices, we require coverage scans from at least two devices at each location.

These features are determined using data from coverage scans, which capture the real-time network conditions of Android Speedtest users across the globe. An operator's footprint is the fraction of locations within a given market where a device has access to service. Each location is assigned a score based equally on the general and 4G service. For example, if a provider offered non-4G service in a location, that location would receive a score of 1/2. The overall Coverage Score for an operator is its footprint multiplied by the average quality score across its observed locations. Further, a multiplier is applied to the Coverage Score so that it is scaled from 0 to 1000 to avoid confusion that it could represent the percentage of an area or population with coverage.

## Coverage Maps

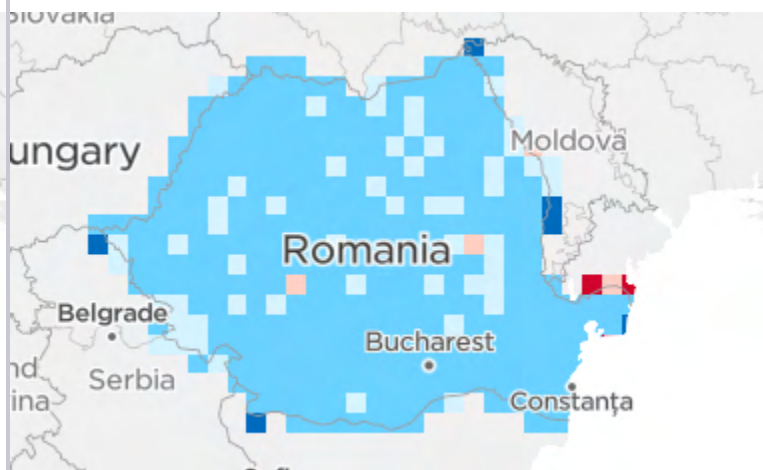
### DIGI's General Service

Places that showed general service within the country.



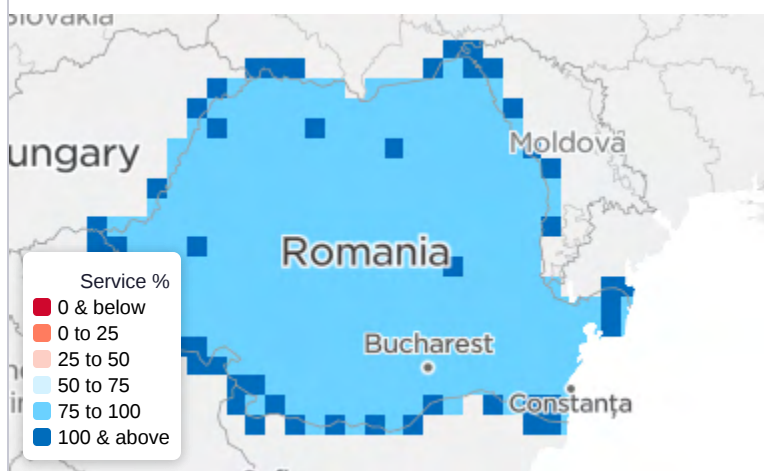
### DIGI's 4G Service

Places that showed 4G service within the country.



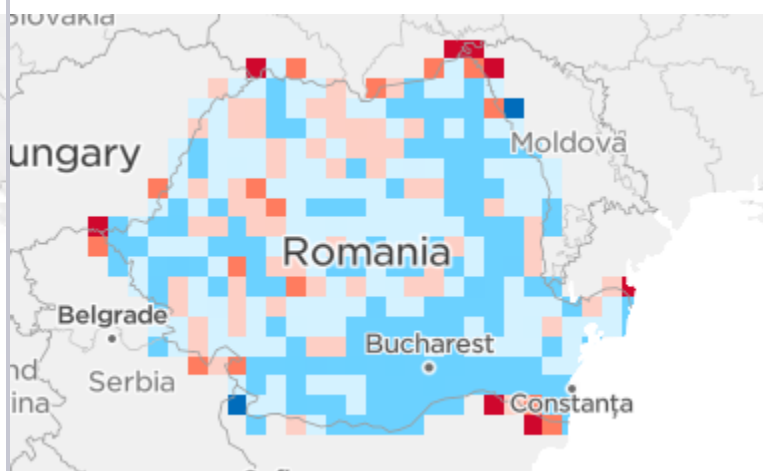
### Vodafone's General Service

Places that showed general service within the country.



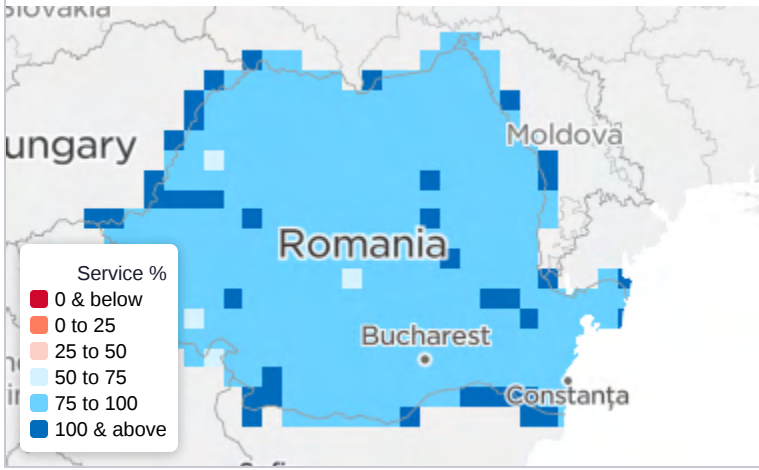
### Vodafone's 4G Service

Places that showed 4G service within the country.



# Telekom's General Service

Places that showed general service within the country.



# Telekom's 4G Service

Places that showed 4G service within the country.

