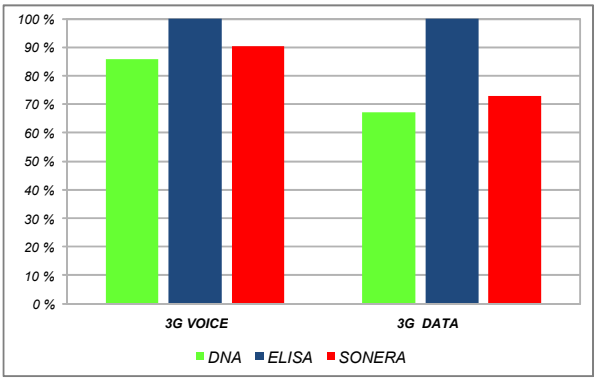
Summary

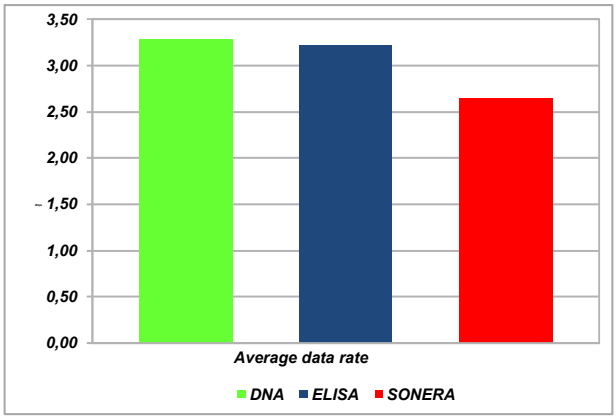
This summary presents the main results of the independent study of 3G networks taken from February-April. The survey was conducted in 100 municipalities across Finland.

Based on the results, Elisa's 3G network has the broadest coverage. DNA and Sonera are still pretty even, although Sonera has improved its results. Elisa's network was found to have the highest signal level. DNA and Sonera are about equally strong, though Sonera has again improved its results in relative terms. DNA and Elisa achieved the same average data rates, although the DNA data rate is slightly higher than Elisa's. In this comparison, Sonera came in third. When it comes to the number of base stations, Elisa is ahead of the others, with Sonera coming in second in this respect and DNA coming in third.



(Figure 1). *Coverage of 3G voice and fast 3G data (the highest result is scaled to 100 %)*

Elisa clearly provides broader coverage at the examined signal strengths for voice services, although the lead has slightly narrowed since the previous comparison. Sonera has slightly improved its results since the earlier comparison. Similarly, with data services at the examined field strengths, Elisa is clearly ahead, though the gap between DNA and Sonera's results is smaller than before. Sonera has here again improved its results (Figure 1).



(Figure 2). *Operators' average data speeds*

The survey also examined the average data speed of the operators. DNA and Elisa's results are almost the same in this area, with DNA achieving the highest result and Elisa coming in second. Sonera came in third. (Fig. 2).

The 3G network voice services were also tested by repeatedly making 90-second test calls. Throughout the test time, over 6,000 test calls were made for each of the networks. In relative terms, Elisa's network suffered the least number of failed call attempts. The network with the second lowest number of failed calls was Sonera, followed by DNA. The lowest number of dropped calls occurred on Sonera's network. The network with the second lowest number was DNA, and Elisa's network came in third (Fig. 3).

Operator	Failed call attempts	Dropped calls
Elisa	0.63 %	0.62 %
DNA	1.28 %	0.56 %
Sonera	0.87 %	0.53 %

Figure 3. The probability of unsuccessful call attempts and dropped calls

Elisa now has a clear advantage over the others in the number of base station cells. Sonera has slightly gained on Elisa in this comparison, coming in second, with DNA coming in third (Figure 4).

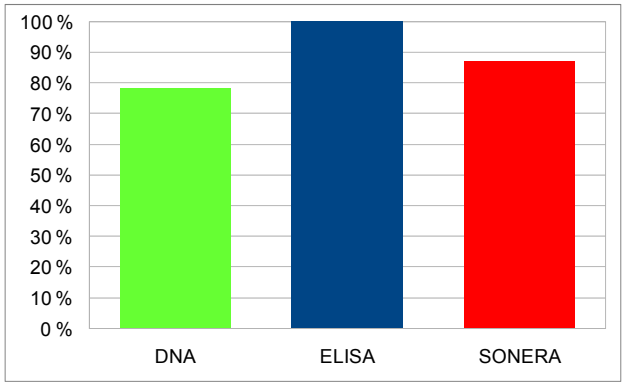
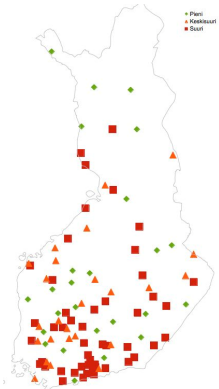


Figure 4. *The number of 3G cells observed in the measurements. (The highest number of cells equals 100%.)*

To sum up the results, the Elisa 3G network remains once again the most comprehensive. The Elisa network also has the highest signal strength. Sonera has improved its results in relative terms, coming second in these comparisons, with DNA coming in third. In the analysis of data speeds, DNA achieved the highest results, almost matched by Elisa in second place and followed by Sonera in third position. In the number of base station cells, Elisa is ahead of the other operators. Sonera is in second position, followed by DNA.

The survey was carried out by ECE Ltd and covered Finland's 50 largest municipalities, 25 of those ranked between 51 and 100, and 25 other municipalities. The included municipalities account for about 75 per cent of the country's population. Earlier surveys were conducted in 2008, 2009, and 2010 during the spring and/or autumn (Figure 5).

Of the 16,160 kilometres covered during the survey, 13,507 kilometres were measuring routes. The reception in each municipality was examined by carrying out measurements in the central area and residential and industrial zones as well as on the main roads leading to the municipality.



(Figure 5). *The municipalities included in the survey*

The coverage survey was commissioned by Elisa and carried out by European Communications Engineering (ECE Ltd), an independent Finnish expert service company in the field of radio network design, training and development.

For more information, please contact:
ECE: www.eceltd.com / Risto Jurva, Tel. 046 712 1130
Elisa: www.elisa.fi / Eetu Prieur, Tel. 010 26000