

RADIO SPECTRUM MANAGEMENT



Spectrum auctions

The [Radiocommunications Act 1989](#) heralded a new era for the management of the radio spectrum in New Zealand. This Act enabled the creation of property rights for spectrum and also the use of market-driven allocation mechanisms for the distribution of the newly created rights.

The Act does not specify any particular allocation mechanism. Radio spectrum was initially sold using second price then first price tender systems. The first auction was held in 1996, making New Zealand the first country to sell rights to use spectrum in this way. An Internet-based computer system was developed for the second auction, held in 1998.

Internationally, spectrum auctions are now widespread. They are recognised as an efficient way to allocate spectrum to its highest value use.

Early auctions

Radio Spectrum Management (RSM) initially used simultaneous ascending auctions. This type of auction involves making all lots available for bidding at the same time. The auction takes place over a number of rounds of a specific duration (say 30 minutes), until no further bidding takes place on the lots being offered.

This type of auction allows bidders who wish to purchase specific combinations of lots to take a part in the auction. Advantages of this type of auction are that bidders obtain full market information and are able to determine their level of success on any combination of lots at any time during the auction.

Spectrum auction design in New Zealand

RSM produced the report *Spectrum Auction Design in New Zealand* in November 2005. The report describes how New Zealand has competitively allocated radio spectrum, factors pertinent to auction design, and alternative options for competitive allocation. This report has been published to provide the industry with further information on auction design.

- [Spectrum auction design in New Zealand report \[95 KB PDF\]](#)

Recent auctions

More recently, auctions have been used for AM/FM broadcasting licences, wireless broadband management rights in the 2300 and 2500/2600 MHz ranges, and cellular management rights.

In 2013-14, the rights to the 700 MHz band were auctioned for 4G-LTE cellular use. This 'digital dividend' band became available after New Zealand switched to digital television broadcasting, thus freeing up the former analogue broadcasting spectrum.

The 700 MHz auction was structured as a simplified combinatorial clock auction, with nine lots available. This was a new auction method for New Zealand. The auction began with a clock allocation phase in which bidders were limited to bidding for three lots each. One bidder only bid for two lots, which meant that a supplementary allocation phase was held to auction the final lot. In both these phases, bidders bid for generic blocks of spectrum. Finally, a combinatorial assignment phase was held in which bidders, knowing how much spectrum they had won in the allocation phases, bid again for particular placements (frequencies) in the 700 MHz band.

[Spectrum auctions and results 1996 - present](#)

A table of spectrum allocations (generally by auction) held from 1996 to the present.

[Read more about Spectrum auctions and results 1996 - present](#)

[Tenders for radio spectrum rights 1989 - 1995](#)

An overview of tenders held for radio spectrum rights between 1989 and 1995 including the results for each tender.

[Read more about Tenders for radio spectrum rights 1989 - 1995](#)