

**Ministry of Communications
Office of the Spokesman**

11 Tammuz, 5779
14 July 2019

Fifth Generation Frequencies Tender is Underway

The Ministry of Communications announces the tender for Fifth Generation frequencies. Publication of the tender constitutes a major milestone for leading the State of Israel to the forefront of technological advancement worldwide together with the leading countries in the world.

Main principles of the tender:

- **The frequencies offered in the tender will enable a response to the growing demand for broadband communications by expanding capacity.**
- **For the first time, the frequencies tender will be accompanied by an incentive system that includes grants and a reduction of NIS 500 million in fees.**
- **Tender payments will be deferred to 2022 in order to enable the operators to direct their financial resources to invest in upgrading the networks.**
- **In the tender, the owners of existing networks will be able to compete by submitting joint proposals in a manner that will lead to effective allocation of frequencies for the benefit of the public.**
- **In addition, the tender will include an open segment of 100 MHz for new players that will generate technological competition in the infrastructure and services of the 5th generation networks.**

The Tenders Committee combined an inter-ministerial effort with significant staff work by government experts to formulate a balanced format for the 5th Generation frequencies tender in a manner that would suit current market conditions.

In their work, the professional teams formulated an economic, engineering and legal snapshot, including the examination of parallel models around the world, as well as dialogue with experts and the market, while managing and optimizing the frequency spectrum.

The Minister of Communications, MK Mr. David Amsalem: “This is a technological process that will make its mark on the coming decades. With the advent of the new 5th

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generation technology, the smart digital revolution will affect all aspects of our lives – smart homes, smart cities, smart medicine, bringing the periphery closer to the center, education, autonomous vehicles, advanced industry and more.

“The financial position of the operators at this time has not escaped our notice, and the tender also takes this situation into account.

“I congratulate my colleagues and partners in the Tenders Committee for the professional, dedicated and responsible work that has been done to enable laying the cornerstone for the next era of technology today.”

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Tender Details

As part of the implementation of the policy to promote Israel's leadership in the field of communications and in order to meet the various needs of cellular communications in Israel, including a growing demand for data communication, a narrowing of the technological gap between Israel and advanced countries in the world, and providing an option to promote Israel's technological infrastructure, the Ministry of Communications announces this tender to provide 5th generation services.

The 5th Generation is designed to provide mobile cellular radio (MCR) services that will enable ultra-fast data transfer rates with greater capacity, greater reliability and lower lag time. The 5th Generation will enable the creation of new business models and services in different industry sectors. In accordance with international standards, the 5th Generation will provide a solution for capacity problems, while improving the end user experience as follows:

- A. **Ultra-wide band:** The ability to provide very high speed connectivity for applications such as: Internet access, video conferencing, laminated reality and any other uses there may be in the future;
- B. **Massive IOT:** The ability to support communication between a multitude of endpoints, including devices, machines and sensors with a long battery life;
- C. **Mission Critical Applications:** The ability to support communications characterized by very high reliability and a very short delay or lag, allowing, for example: industrial automation, new medical applications, safety and security applications, autonomous vehicles.

Objectives of the Tender:

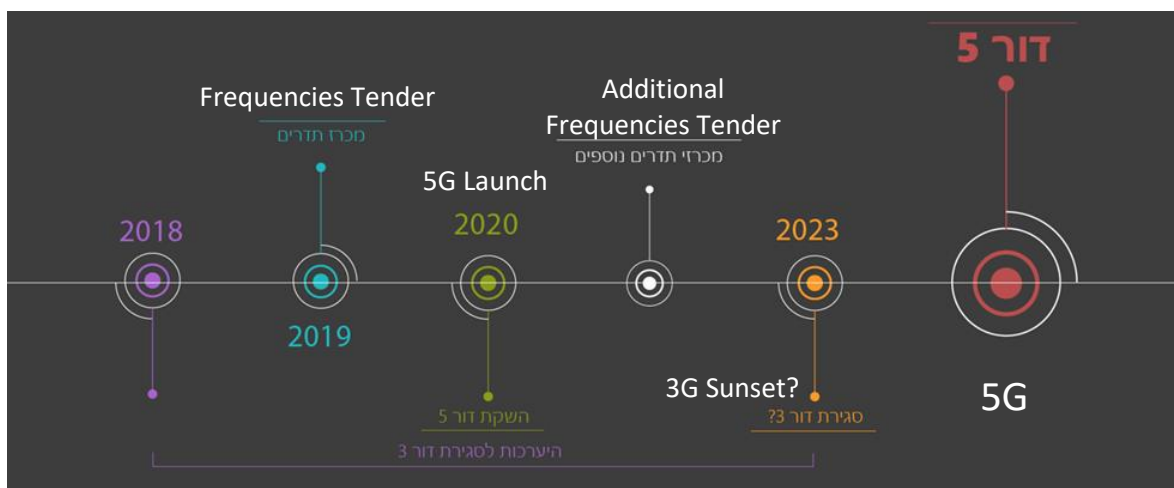
- Upgrading and improving cellular networks in Israel – upgrading the networks will provide advanced bandwidth services and improve the level of services, including support for digital services and the IOT era. These factors will lead, *inter alia*, to a narrowing of the technological gap between Israel and the advanced countries in the world.
- “5th Generation Deployment” – Determination of obligations alongside incentives to encourage deployment of 5th Generation networks in Israel in accordance with international standards, subject to the tender documents.
- **Promoting Competition** – Maintaining the existence of competition and promoting technological competition in the mobile market.

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The guiding principle in the tender is to **strengthen the 4th Generation and add the 5th Generation by a system of incentives that encourage investment.**

The 5th Generation is likely to lead to breakthroughs in additional technologies and products in many areas that are not directly related to communications services, but are expected to affect our entire lifestyle. The range of development possibilities is very broad and there is a clear macroeconomic incentive for early adoption of these technologies in order to provide a basis for growth in many sectors of the economy. Implementing the 5th Generation is an ongoing process that opens a wide world of possibilities. **The current tender is the first milestone.**

The Ministry of Communications will characterize the market structure, spectrum, principles of competition, etc., according to the following road map:



The structure and terms of the tender were determined by the Tenders Committee to encourage the deployment of advanced 5th Generation technologies according to the objectives of the tender, and the Tenders Committee determined the principles of the tender accordingly. Several key principles:

- **Licensing fees will be deferred until January 2022** – Deferment of payment will allow operators to channel financial resources into investments and not into paying the licensing fees for the first two years.
- **The tender pricing model** – The tender will be of the Combinatorial Clock Auction (CCA) method family. This method allows competitors to compete simultaneously on all frequency bands and to offer integrated proposals that will maximize their benefit and lead to the best result in terms of frequency allocation.

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- **Vickrey auction payment model** – This method is similar to the “second price” method for selling a discrete product, where the winning competitor of the tender does not pay his maximum bid, but rather the second highest proposal among the competitors who participated in the tender. Vickery auctions determine that each player pays the “damage” he causes for the benefit of others by his participation in the tender. In this way, the model does not maximize the revenues from the allocation of frequencies in the tender and enables the bidder to express the true value of the frequencies for them.
- **Joint Proposal** – A joint proposal allows operators with a joint network to participate in the tender together, thereby preventing competition between the operators of the same network and inefficient allocation of frequencies.

In addition, the Ministry of Communications and the Budget Division of the Ministry of Finance have formulated a **system of incentives that will be integrated into the tender**. The incentive system is designed to promote the deployment of networks in accelerated timetables both for the improvement of the networks and to advance the deployment of advanced technologies of the 5th Generation according to the objectives of the tender, with a comprehensive view of the market, the scope of competition and the financial state of the cellular operators.

The system is composed of two tracks:

- **Reduction of frequency fees** – The Tenders Committee has requested that the Ministers of Finance and Communications perform an annual reduction of approximately 28% of all frequency fees for a period of 4 years. Operators will be required to meet annual technical targets: operating a minimum bandwidth of 45 MHz, utilizing VoLTE (Voice over Long-Term Evolution) and spectral efficiency in favor of advanced technologies. The reduction will be given at the beginning of each year; the operator will be required to complete the payment for the reduction from the previous year only if he fails to meet the engineering goals.
- **Deployment grants in the sum of NIS 200 million** – Operators will be required to deploy 250 5th Generation transmission sites by 31.12.2021 according to the first come, first served method:
First Place – 41% up to NIS 82 million.
Second Place – 33% up to NIS 66 million.
Third Place – 26% up to NIS 52 million.

The total amount of incentives is estimated at NIS 500 million

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The 5th Generation will be a central infrastructure for a wide range of applications that will enable technological breakthroughs in the foreseeable future and the development of extensive applications beyond the cellular services we know today (smart transportation, smart health, smart agriculture, etc.). These applications will affect the public's way of life and are expected to lead to a significant increase in economic growth in terms of GDP. Therefore, there is an opportunity to open this potential market to new 5th Generation operators as well, who will generate technological competition, infrastructure and services for the 5th Generation. The winners of the tender will develop a 5th Generation system that will serve as an infrastructure platform for new applications in Israel and around the world.

Any entity will be able to compete in the open portion of 100 MHz in the area of 3,500 MHz, provided that it meets the threshold conditions, while presenting shareholders' equity in the amount of NIS 30M or 20% of the cost of construction of the project; and presentation of a technical and business plan for providing 5th Generation services using this technology system. The new winner will be granted a special license for the provision of specialized 5th Generation services, but he will not be allowed to provide cellular services in previous generations and will be a 5th Generation operator only.

The tender will be conducted in three main stages:

1. Joint Proposals Stage – The stage of submitting a notice of a joint offer agreement or non-submission of a joint offer agreement applies only to operators with a joint network.
2. Threshold Conditions Stage – At this stage, the bidders will submit a basic proposal.
3. The financial pricing process, which includes a dynamic pricing process and a static pricing process, assigning the winners and determining the payments.

At the end of this process, the Tenders Committee will notify the bidders of the winners, the pricing tracks assigned to them and the amount of the license fee for each winner. The tender guarantee will be NIS 10 million for an existing operator and NIS 7 million for a new 5th Generation operator.

The frequency inventory offered in the tender in each frequency band is:

700 MHz – Bandwidth of 30x2 MHz in the FDD method.

2,600 MHz – Bandwidth of 60x2 MHz in the FDD method.

3,500-3,800 MHz – Bandwidth of 300 MHz in the TDD method.

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Frequency Range (MHz)	Total Band Width (MHz)	Pricing Band (MHz)	No. of Pricing Band Units	Open/Closed Part
700 (I)	2x22	2x5	5	Closed
700 (II)	2x5	2x5	1	Closed
2,600 (I)	2x40	2x10	4	Closed
2,600 (II)	2x20	2x10	2	Closed
3,600-3,800	200	20	10	Closed
3,500-3,600	100	10	10	Open

The existing license of tender winners will be expanded, new operators will be granted a new license. An existing MCR operator with frequencies in the 3,500 MHz range will be required to deploy the 5th Generation system in the service area, including reaching deployment in statistical areas according to the classification of the Central Bureau of Statistics, and to accrue 500 points within 60 months from the date of granting the license divided into three milestones. The score will be set as follows:

Area Classification - According to Central Bureau of Statistics Definition	Area Location – According to Central Bureau of Statistics Definition	
	Center	Periphery
Residential	1 Point	2 Points
Open Area	2 Points	3 Points
Institutional		
Public Area	3 Points	4 Points
Industry		

A MCR operator that receives at least 10 MHz from the 700 MHz frequency band will be required to provide national coverage in accordance with the criteria currently existing in the license for the 4th Generation within 60 months from the date of granting the license, divided into three milestones.

A new 5th Generation operator will be required to start providing 5th Generation services using the frequencies he received the right to use, within a year and a half.

The deployment guarantee for existing operators will be NIS 12 million for each network that won the tender. A new operator will be required to guarantee the sum of two million NIS.