

GRANTS A LIMITED TELECOMMUNICATIONS SERVICE PERMIT

EXEMPT RESOLUTION N° 3075

SANTIAGO, AUGUST 12, 2013

CONSIDERING:

As requested by the interested party (AUI) through SUBTEL entry N°52.862 of 08.07.2013. (SL-310/2013).

IT IS RESOLVED:

- 1.- Grant a Limited Radiocommunications Service Permit to ASSOCIATED UNIVERSITIES INC. (AUI), RUT N° 69.507.700-9, domiciled at Avenida Nueva Costanera N° 4091, Office 502, Vitacura, Metropolitan Region, hereinafter the licensee, under the terms indicated.
- 2.- The term of this permit shall be ten (10) years as of the total processing of this Resolution.
- 3.- The term to start the works shall be one (1) month and for its completion shall be ten (10) months; likewise, the term to start the service shall be eleven (11) months. All these terms shall be counted from the date of the total processing of this Resolution.
- 4.- The technical characteristics and location of the authorized system facilities are those indicated below:
 - 4.1 It is feasible to accede to what has been requested, therefore the use of the frequency bands with the technical characteristics indicated below is authorized:

Frequency bands for reception of the radio telescope:

Band N°	Frecuency Range (GHz)
1	35-52
2	67-90
3	84-116
4	125-163
5	163-211
6	211-275
7	275-373
8	385-500
9	602-720
10	787-950

The radio telescope will be able to operate within all the frequency bands indicated, however, it is not possible to guarantee protection in the frequency bands, or part of them, not attributed to radio astronomy on a primary basis.

Station Type : Radio astronomy station, array of 66 receive-only antennas.

Location : Meseta Chajnantor S/N; San Pedro de Atacama, II Region.

Geographical coordinates: 23°01'40" south and 67°45'17" west (Datum WGS-84).

Antennas : Cassegrain type parabolic antennas

54 antennas of 12 m diameter

12 antennas of 7 m diameter

4.2 For the purpose of protecting the radio telescope reception, the following zones are defined:

a) Protection Zone, centered at 23°01'40" south and 67°45'17" west and with a radius of 30 km, within the national territory, within which the installation of any third party radio communication system operating within the reception frequency bands indicated in point 4.1 will not be authorized.

b) Coordination Zone, where coordination is understood as the process by which the opinion of the permit holders, ESO and AUI, will be requested regarding a specific request from third parties that this Undersecretariat considers may interfere with or affect the operation of the radio telescope. Likewise, in the event that these licensees detect emissions that affect the operation of the radio telescope, they will inform this Undersecretariat for coordination. The deadlines involved in each coordination process will depend on each case.

The coordination zone will be centered at 23°01'40" south and 67°45'17" west and with a radius of 120 km, within the national territory. Within this zone, the emissions of other permit holders or concessionaires will be limited considering the following cases:

- The emissions of each equipment that is authorized to third parties and that transmits in frequencies lower than the reception frequency of the radio telescope (<1.3 GHz), will limit its equivalent isotropic radiated power (E.I.R.P.) according to the values indicated in Table 1, based on the distance measured from the emitting source to the nearest edge of the observatory area, which is equivalent to a power flux density lower than 2×10^{-6} W/m² within the observatory area. The observatory area shall be understood as the circle of radius 20 km whose center coincides with that of the coordination zone. In addition, such equipment shall limit out-of-band and nonessential emissions, within the range of reception frequencies authorized to the radio telescope, for which the protection criteria established in recommendation ITU-R RA.769-2 or another recommendation that replaces or complements it, shall be applied.

Distance d (km)	E.I.R.P. (kW)
10	2,5
20	10,0

30	22,5
40	40,0
50	62,5
60	90,0
70	122,5
80	160,0
90	202,5
100	250,0

Table 1 Maximum acceptable E.I.R.P. as a function of distance

- At frequencies above 31.3 GHz, equipment to be licensed to third parties shall limit in-band, out-of-band and spurious emissions so as not to cause harmful interference on the authorized receiving frequencies to the radio telescope, applying the protection criteria set out in Recommendation ITU-R RA.769-2 or any superseding or complementing Recommendation ITU-R RA.769-2.

4.3 It should be noted that it is not possible to guarantee protection from interference generated by the following types of services and systems operating in bands not allocated to radio astronomy:

- Those performing space radio communication.
- Those performing terrestrial radio communication with authorized facilities outside the protection area and using mobile stations.
- Systems using high altitude platform stations (HAPS).

5.- The licensee shall provide the necessary information to carry out the international frequency coordination procedure before the ITU (International Telecommunication Union). It should be noted that this procedure will only allow the coordination of those frequencies of the bands allocated to the radio astronomy service on a primary basis.

6.- The licensee may not initiate services without the works and installations having been previously authorized by the Undersecretariat; to this effect, it must request, by certified letter, verification that said works and installations are correctly executed and correspond to the approved project.

7.- It is the obligation of the licensee to be aware of and comply with the provisions of the General Telecommunications Law, its Regulations and amendments, as applicable, in view of the status it acquires by virtue of this Resolution.

ENOS ARAYA CASTILLO
HEAD OF CONCESSIONS DIVISION

ORD. N° 8648

ANT.:1) Subtel Entry N° 54.712 dated 04.18.2018.

ANT.:2) Exempt Resolution No. 3075 of August 12, 2013.

SANTIAGO, JUNE 6, 2018

SUBJECT: Authorizes request for reception of works of Limited Radiocommunications Service, in the commune of San Pedro de Atacama, Antofagasta Region.

TO: LEGAL REPRESENTATIVE ASSOCIATED UNIVERSITIES INC.

FROM: UNDERSECRETARY OF TELECOMMUNICATIONS

1.- By means of the note mentioned in ANT. 1), the represented party requested the reception of the works and installations of the technical project approved by document in the ANT. 2), corresponding to Limited Telecommunications Service, located in the commune of San Pedro de Atacama, Antofagasta Region.

2.- In this regard, I hereby inform you that after analyzing the documents presented in the ANT. 1), and in accordance with the provisions of ANT.2), it is concluded that your company has complied with said requirement.

3.- Due to the aforementioned and in accordance with the provisions of Article 24°A, of Law N° 18,168, General Telecommunications Law, this Undersecretary of State has resolved to authorize the works and installations corresponding to the technical project approved by Exempt Resolution No. 3075 of 2013, without prejudice to subsequent actions that may be executed, in functions defined in the General Telecommunications Law.

OSVALDO CUBILLOS DIAZ

INSPECTION DIVISION