

Reconsideration Request

1. Requester Information

Name: **Afilias Limited**
Address: Contact Information Redacted
Email: Contact Information Redacted

Name: **BRS Media, Inc.**
Address: Contact Information Redacted
Email: Contact Information Redacted

Name: **Tin Dale, LLC**
Address: Contact Information Redacted
Email: Contact Information Redacted

Hereinafter collectively: the “Requesters”.

2. **Request for Reconsideration of (check one only):**

- Board action/inaction**
 Staff action/inaction

3. **Description of specific action you are seeking to have reconsidered.**

Requesters seek the reconsideration of ICANN’s Community Priority Evaluation Panel’s determination whereby Application ID 1-1083-39123 for the .RADIO gTLD (hereinafter: the “Application”) submitted by the European Broadcasting Union (hereinafter: the “EBU”) prevailed in Community Priority Evaluation. This determination was posted on ICANN’s website under URL <https://www.icann.org/sites/default/files/tlds/radio/radio-cpe-1-1083-39123-en.pdf> (hereinafter: the “Determination”, a copy whereof has been attached to this Reconsideration Request as **Annex 1**).

As a result of this Determination, ICANN has:

- resolved the contention set for the .RADIO gTLD;
- changing the status of the Application to “In Contracting”. Reference is made to the Application’s status page, available at <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1468>;
- changing the status of Requesters’ respective applications for the .RADIO gTLD to “Will Not Proceed”, as referred to their respective status pages available at <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1848>; <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1508>; and <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/624>.

Together with the initial Reconsideration Request that has been filed on behalf of Requesters on (date), Requesters submitted a Request for Information under ICANN’s Documentary Information Disclosure Policy on September 26, 2014, a copy whereof has been attached hereto as **Annex 2** (hereinafter: the “Request for Information”).

Considering the fact that the Request for Information is aimed at obtaining further information and insights into the information, criteria and arguments used by the Community Priority Evaluation Panel in connection with its evaluation of the Application, Requesters request ICANN to review (i) ICANN’s Response to the Request for Information, and (ii) the Determination as one single Reconsideration Request, unless expressly provided for otherwise herein.

4. Date of action/inaction:

- 10 September 2014 with respect to the publication of the Determination;
- 24 October 2014 with respect to ICANN’s Response to Requesters’ Request for Information under ICANN’s Documentary Information Disclosure Policy, attached hereto as **Annex 3**.

5. On what date did you become aware of the action or that action would not be taken?

- 11 September 2014 with respect to the publication of the Determination;
- 27 October 2014 with respect to the ICANN’s Response to Requesters’ Request for Information under ICANN’s Documentary Information Disclosure Policy.

6. Describe how you believe you are materially affected by the action or inaction:

Considering the fact that the Determination states that the EBU's Application prevailed in the context of Community Priority Evaluation, the Requesters' respective applications for the .RADIO gTLD will be no longer considered by ICANN, which will likely result in ICANN not awarding the .RADIO gTLD to any of the Requesters.

Furthermore, ICANN's decided not to disclose any additional information requested by Requesters in their Request for Information, which was aimed at providing Requesters more insights into the information on which the EIU has based its Determination, and more in particular information relating to:

- (1) the agreement(s) between ICANN and the organizations and individuals involved in the Community Priority Evaluation, in particular the representations and warranties given and quality standards to be applied by such organizations and individuals;
- (2) policies, guidelines, directives, instructions or guidance given by ICANN relating to the Community Priority Evaluation process;
- (3) internal reports, notes, meeting minutes drawn up by or on behalf of ICANN, the Community Priority Panels, and other individuals or organizations involved in the Community Priority Evaluation in relation to the Application [for .RADIO that prevailed in the CPE];
- (4) detailed information in relation to (i) the information reviewed, (ii) criteria and standards used, (iii) arguments exchanged, (iv) information disregarded or considered irrelevant, and (v) scores given by the Community Evaluation panel in view of the criteria set out in the Applicant Guidebook, and more in particular: [relating to the panel's determination of each individual criterion].

The full Request for Information has been enclosed to this Reconsideration Request as **Annex 2** and is incorporated herein by reference.

ICANN's Response to the Request for Information states:

"For each of the items identified above as subject to Defined Conditions of Nondisclosure, ICANN has determined that there are no particular circumstances for which the public interest in disclosing the information outweighs the harm that may be caused to ICANN, its contractual relationships and its contractors' deliberative processes by the requested disclosure".

The mere fact of denying Requesters access to information that has been used in connection with the evaluation of the Application without (i) expressly referring

on which information the Community Priority Evaluation Panel has relied, (ii) providing a statement regarding the relevancy of such information in connection with the actual evaluation, nor (iii) arguments on why such information is supporting the outcome of the actual evaluation deprives Requesters of the possibility to review the Determination, and restricts their fundamental rights to challenge such Determination in the context of a Reconsideration Request and, ultimately, use the transparency and accountability mechanisms embedded into ICANN's By-Laws.

7. Describe how others may be adversely affected by the action or inaction, if you believe that this is a concern.

In view of the Requesters, the concept "radio" is much broader than the so-called community definition provided by the EBU, as contained in the determination.

Requesters refer to:

- the community definition contained in the Application, which – in Requesters' opinion – does not meet the criteria for community-based gTLDs that have been set out in ICANN's Applicant Guidebook;
- the community definition contained in the Application does not cover the "radio" concept which is much broader than what has been set out in the Application, as will be demonstrated below. By way of example, Requesters refer to the description of all uses of the word "radio" listed by Wikipedia (see: <http://en.wikipedia.org/wiki/Radio>; and [http://en.wikipedia.org/wiki/Radio_\(disambiguation\)](http://en.wikipedia.org/wiki/Radio_(disambiguation)));
- the registration policies, and in particular the eligibility and enforcement criteria set out in the Application do not meet the standards set out in the New gTLD Applicant Guidebook. In particular, considering the fact that the eligibility criteria contained in the Application for registering domain names under the .RADIO gTLD as well as the community definition contained therein are contradictory, vague, and ill defined, this may result in:
 - o third parties who are affiliated with the "radio" concept, such as those who are active in the telephony, navigation, radar, video, heating, or other industries referred to – by way of example – Wikipedia will be unable to register domain names in the .RADIO gTLD because they do not meet the eligibility requirements set out in the Application, which seems to be mainly directed to the "radio industry";
 - o others, such as but not limited to those who merely have the technical skills to set up and maintain a "plug and play" Internet radio software or service on his or her computer but who are not related to the "radio industry" or have no further affiliation with the "radio" concept at all, will be, according to the Application, eligible

to register domain names in the .RADIO gTLD. Hence, these parties will have the ability to block or deprive those who are truly and genuinely affiliated to the broad concept of “radio” to register domain names in this gTLD ...

- the fact that, in the Determination, the Community Priority Evaluation panel was of the opinion that the Requesters’ respective oppositions against the Application being recognized as a community-based gTLD and/or being considered to meet the thresholds set out in the Applicant Guidebook for prevailing in the context of Community Priority Evaluation has been considered “of no relevance”, considering the fact that Requesters operate a substantial part of the “radio”-related domain names in, for instance, .INFO, .ORG, .MOBI, .ASIA, .FM, .AM, and many others;¹
- the fact that, bearing in mind the above, the Community Priority Evaluation panel was of the opinion that the Requesters collectively have been considered “a group of negligible size”.

Requesters refer to their Request for Information, attached hereto as **Annex 2**.

8. Detail of Board or Staff Action – Required Information

Provide the Required Detailed Explanation here:

8.1. Background Information

In the context of ICANN’s New gTLD Program, ICANN has received the following applications for the .RADIO gTLD:

- the EBU’s application for a community-based gTLD (Application ID 1-1083-39123);
- Afiliat Ltd.’s “standard” application (Application ID 1-868-75631);
- BRS Media, Inc.’s “standard” application (Application ID 1-994-75477);
- Tin Dale’s “standard” application (Application ID 1-1593-8224).

On September 10, 2014, ICANN’s Community Priority Evaluation panel published its Determination stating that the EBU’s Application for the .RADIO gTLD obtained a passing score of 14 out of 16 points, and hence prevailed in Community Priority Evaluation.

¹ Based on the zone file information for each of these TLDs, the “radio”-related domain names registered in these TLDs seem to account for about half of the number of the 50.000 “websites” referred to in the EBU’s Application.

Since Requesters are of the opinion that the publication of these Community Priority Evaluation results are considered to be an action by ICANN staff, they are entitled to invoke and utilize ICANN's Reconsideration Request process in relation to this Determination / action by ICANN staff.

The immediate effect of this Determination seems to be that each of the Requesters' applications for the .RADIO gTLD will no longer be considered by ICANN, given the fact that the status of each of their applications has been changed to "Will Not Proceed", as is reflected on their respective Application Status pages published by ICANN. Reference is made to:

- Afilias Ltd.'s application for the .RADIO gTLD:
<https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1848>;
- BRS Media, Inc's, application for the .RADIO gTLD:
<https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1508>;
- Tin Dale LLC's application for the .RADIO gTLD:
<https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/624>.

8.2. Requesters' Request for Information under ICANN's Documentary Information Disclosure Policy (DIDP)

Following receipt of the Determination, Requesters have submitted a detailed Request for Information to ICANN under the latter's Documentary Information Disclosure Policy (DIDP).

In Requester's opinion, the EIU, who has been appointed by ICANN as the community priority evaluation independent panel firm, is subject to the same policies – especially those relating to transparency and accountability – as ICANN. Since the EIU is considered an "ICANN Affiliated Party" under ICANN's Top-Level Domain Application Terms and Conditions (see <http://newgtlds.icann.org/en/applicants/agb/terms>) it is subject to the same rules and procedures as ICANN, and more precisely those roles and procedures reflected in ICANN's By-Laws.

Indeed, the fact that ICANN has apparently deferred the actual community priority evaluation to a third party does not release ICANN or such third party from the transparency and accountability obligations contained in ICANN's By-Laws.

8.3. ICANN's Response to Requesters' Request for Information

However, ICANN denied Requesters' Request for Information, whereby

Requesters refer to the following quotes from the Response to the Request for Information:

- 1) *“The contract between ICANN and the EIU is not appropriate for public disclosure through the DIDP”*. More in particular, ICANN refers to certain alleged Defined Conditions for Nondisclosure that would apply to the requested contract:
 - *Internal information that, if disclosed, would or would be likely to compromise the integrity of ICANN's deliberative and decision-making process by inhibiting the candid exchange of ideas and communications, including internal documents, memoranda, and other similar communications to or from ICANN Directors, ICANN Directors' Advisors, ICANN staff, ICANN consultants, ICANN contractors, and ICANN agents.*
 - *Information provided to ICANN by a party that, if disclosed, would or would be likely to materially prejudice the commercial interests, financial interests, and/or competitive position of such party or was provided to ICANN pursuant to a nondisclosure agreement or nondisclosure provision within an agreement.*
 - *Confidential business information and/or internal policies and procedures.*

- 2) *“ICANN has previously indicated in response to Request No. 20140804-1 that ICANN has communications with persons at EIU that are not involved in the scoring of a CPE (but otherwise assist in the facilitation of a particular CPE), and identified that those communications are not appropriate for public disclosure”*;

- 3) *“To help assure independence of the process and evaluation of CPEs, ICANN (either Board or staff) is not involved with the CPE Panel’s evaluation of criteria, scoring decisions, or underlying analyses. The coordination of the CPE Panel, as explained in the CPE Panel Process Document, is entirely within the work of the EIU’s team. ICANN does not have, nor does it collect or maintain, the work papers of the individual CPE Panels (including the .RADIO CPE Panel) that would likely contain the information called for within these items.”*

None of the above arguments are convincing in light of ICANN’s By-Laws obligations relating to transparency and accountability:

Indeed, it is not because of the fact that the EIU is independent from ICANN, the EBU or Requesters, that it would not be required to be subject to the same obligations of transparency and accountability as ICANN itself. Indeed, if a decision or determination by such third party materially affects and/or has a material effect in a process that is managed by ICANN – as it has been described in the Applicant Guidebook, the CPE Guidelines, etc. – then such party

should be subject to the same transparency and accountability mechanisms as ICANN.

Therefore, ICANN cannot simply deny its own By-Laws obligations when entering into undisclosed agreements with third parties, in particular when such party or parties assume(s) a role which is actually ICANN's to fulfill.

9. What are you asking ICANN to do now?

Based upon the information contained in the Application, Requesters are convinced that the Application does not meet the criteria to qualify as a community-based gTLD set out in ICANN's Applicant Guidebook.

In view of obtaining further insights into the arguments of the Community Priority Evaluation panel and the information on which such panel has relied, Requesters have submitted together with this Reconsideration Request and request to obtain further information under ICANN's Documentary Information Disclosure Policy.

Based upon the information and arguments included in this Reconsideration Request, for which the Requesters reserve the right to submit additional arguments and information following the outcome of their request submitted to ICANN in accordance with the Documentary Information Disclosure Policy, Requesters request ICANN to:

- (a) acknowledge receipt of this Reconsideration Request;
- (b) suspend the process for awarding the .RADIO gTLD to the EBU;
- (c) restore the "Application Status" of the Requesters' applications and the Application submitted by the EBU to "Evaluation Complete", their respective "Contention Resolution Statuses" to "Active", and their "Contention Resolution Result" to "In Contention";
- (d) reconsider ICANN's Response to Requesters' Request for Information under ICANN's Documentary Information Disclosure Policy, attached hereto as Annex 3, by providing Requesters' with the information requested in Requesters' Request for Information, attached hereto as Annex 2;
- (e) provide Requesters' with an additional timeframe of 15 days following receipt of the information disclosed following disclosure of the information requested in the Request for Information, this in order for them to complete Section (to be completed) of this Reconsideration Request, and submit the final version to ICANN;
- (f) organize a hearing whereby both the EBU and the Requesters can submit, present and discuss their arguments before ICANN, in view of enabling the latter to take an informed decision on the issue;

- (g) regardless of whether ICANN allows Requesters' requests stated in (d), (e) and/or (f) above, reconsider:
- I. the Determination, and in particular not award a passing score in view of the Community Priority Evaluation criteria set out in the Applicant Guidebook for the reasons expressed in this Reconsideration Request;
 - II. ICANN's respective decisions that each of the Requesters' applications for the .RADIO gTLD "Will Not Proceed" to contracting.

10. Please state specifically the grounds under which you have the standing and the right to assert this Request for Reconsideration, and the grounds or justifications that support your request.

10.1. Background

Each and every Requester is an applicant for the .RADIO gTLD.

Reference is made to ICANN's status page for each of the following applications:

- Afiliac Ltd.: <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1848>;
- BRS Media, Inc.: <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1508>;
- Tin Dale, LLC: <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/624>.

Given the fact that due to the Determination, none of the Requesters' applications for the .RADIO gTLD will proceed to the contracting phase with ICANN, which will likely result in ICANN not awarding the .RADIO gTLD to any of the Requesters, it is clear that the Determination materially affects each of the Requesters' respective applications.

As a consequence, they have standing to file this Reconsideration Request in relation to the Determination by the Community Priority Evaluation, as well as ICANN's subsequent decision to change the status of each of the Requesters' applications from "In Contention" to "Will Not Proceed".

Upon submission of their respective applications for the .RADIO gTLD, Requesters have accepted the

10.2. In relation to ICANN's Response to Requesters' Request for Information

As stated above, ICANN has basically denied each and every request for information made by Requesters in their Request for Information.

ICANN states in its Response to the Request for Information that the Economist Intelligence Unit (EIU) is an independent panel firm, that has been engaged by ICANN in order to perform CPEs.

Requesters do not challenge the independency of the Economist Intelligence Unit (EIU), or at least do not have knowledge about any facts or circumstances to the contrary.

However, it is not because of the fact that the EIU is independent from ICANN, the EBU or Requesters, that it would not be required to be subject to the same obligations of transparency and accountability as ICANN itself. Indeed, if a decision or determination by such third party materially affects and/or has a material effect in a process that is managed by ICANN – as it has been described in the Applicant Guidebook, the CPE Guidelines, etc. – then such party should be subject to the same transparency and accountability mechanisms as ICANN.

Requesters have entered into an agreement with ICANN when submitting their respective applications for the .RADIO gTLD to ICANN. It goes without saying that ICANN and any ICANN Affiliated Party is and must be able to be held accountable under ICANN's transparency and accountability mechanisms

Moreover, if it would be so that ICANN has entered into arrangements with third parties that would deprive ICANN of its obligations and responsibilities laid down in its By-Laws, and more in particular its obligations of Transparency, Accountability and Review, then entering such an arrangement by itself must be considered an action that would be contrary to ICANN's By-Laws.

Conclusion

Considering the fact that ICANN has denied each and every request made by Requesters in the context of the Request for Information, the Response provided contradicts established ICANN policies, as provided for in Article IV, Section 2, (2), (a) of ICANN's By-Laws.

Requesters therefore request ICANN to disclose to Requesters any and all information requested in its Request for Information as set out in Annex 2 hereto, and allow Requesters for an additional delay of 15 days following receipt of such information in order to amend – if needed – this Reconsideration Request.

10.3. In relation to the Determination itself

10.3.1. As regards the criterion “Delineation”:

According to the Determination, the community defined in the Application is as follows:

The Radio industry is composed of a huge number of very diverse radio broadcasters: public and private; international and local; commercial or community-oriented; general purpose, or sector-specific; talk or music; big and small. All licensed radio broadcasters are part of the .radio community, and so are the associations, federations and unions they have created (such as the EBU, applicant for the .radio TLD with the support of its sister Unions; see below for more details on Radio industry representativeness). Also included are the radio professionals, those making radio the fundamental communications tool that it is.

However, the Radio industry keeps evolving and today, many stations are not only broadcasting in the traditional sense, but also webcasting and streaming their audio content via the Internet. Some are not broadcasters in the traditional sense: Internet radios are also part of the Radio community, and as such will be acknowledged by .radio TLD, as will podcasters. In all cases certain minimum standards on streaming or updating schedules will apply.

The .radio community also comprises the often overlooked amateur radio, which uses radio frequencies for communications to small circles of the public. Licensed radio amateurs and their clubs will also be part of the .radio community.

Finally, the community includes a variety of companies providing specific services or products to the Radio industry.

The community definition contained in the Application refers to the definition of the “radio industry” as included in the North American Industrial Classification System (NAICS). This definition reads as follows:

“Establishments primarily engaged in broadcasting aural programs by radio to the public. Included in this industry are commercial, religious, educational, and other radio stations. Also included here are establishments primarily engaged in radio broadcasting and which produce radio program materials.”²

² Reference is made to footnote 1 on Page 2 of the Determination.

Key elements in this definition include:

- Criterion 1: members of the radio industry are “*establishments*” and “*radio stations*”;
- Criterion 2: they are “*primarily engaged in radio broadcasting*”; and
- Criterion 3: they “*produce radio program materials*”.

On the basis of the Community Definition provided by the EBU, it is clear that certain “members” of the “radio community” listed by the EBU, such as “radio professionals”, “licensed radio amateurs” and “podcasters” do not meet Criterion 1 set out above.

Also, the EBU and the EIU seem to acknowledge that certain “individuals that are in the radio industry” to which the Determination refers, even expressly referencing the NAICS definition in the footnote immediately thereafter, meet Criterion 1 set out above. Requesters do not understand how an individual can be considered an “establishment” or a “radio station”.

Other “members” of the “radio community” listed by the EBU, such as “podcasters” also fail to meet Criterion 2 set out above: although they are producing radio program materials, they are obviously *not primarily engaged in radio broadcasting*.

As is generally known, streaming media differs from podcasting in that the file is not downloaded to the person’s computer. Instead, the file is “streamed” from a media server directly to the person’s computer.³

Requesters in this respect refer to the fact that the EBU does not have any members with full voting privileges that are offering their services as “Internet only” webcast or streaming as such. Also, there appear to be no EBU members and members of the unions (as the “voting members” are restricted to terrestrial broadcasters that are “podcast only” audio providers).

More in general, it is not clear to Requesters how the concept of “*a variety of companies*” referred to in the EBU’s community definition rhymes with the concept of the Guidebook requirement for community-based applicants to serve a “*clear and straightforward membership that is well-defined*”.

Furthermore, Requesters do not understand why the EIU has acknowledged that “*a variety of companies providing specific services or products to the Radio industry*” meet Criteria 1, 2 or 3 set out above. Indeed, the wording “*variety of companies*” and “*specific services or products*” are obviously much broader than the criteria set forth in the NAICS definition. This is more in particular the case when these companies are rendering “specific” services or products, without expressly mentioning which services are referred to, or what the criteria are for

³ See, for instance: <http://www.law.harvard.edu/about/administration/its/media/streamvpod.html>.

these services or products to be “specific”. These overly broad terms are obviously not in line with the Guidebook’s requirement to serve members of a community that “shows a clear and straightforward membership, and is therefore well-defined”.

Also, Requesters are unaware of any specific membership criteria that would apply to “radio professionals”, “licensed radio amateurs”, “podcasters”, and “a wide variety of companies providing specific services or products to the Radio industry”, apart from the fact that these individuals or organisations have some affinity with the medium “radio”.

For instance, under the Community Evaluation Panel’s assessment, every employee of a radio company or station can register a .radio domain name, even if such employee’s actual professional activities are unrelated to the radio medium as such.

Insofar and to the extent these products and services are specific to the “radio industry”, it is not clear to the Requesters how, on the one hand, the reference made in the Application that the so-called “radio community” includes a “wide variety of members”, including “radio-related providers that can be identified through trademarks”, and “radio industry partners and providers” whereas, according to the NAICS definition, the membership to the radio industry is much more narrow considering the three criteria set out above.

It is commonly known that various companies are offering “Internet radio software” to Internet users, enabling them to operate an Internet radio and stream live audio instantly over the Internet. Considering the fact that – according to the Application – Internet radios are also “part of the Radio community”, it is obvious that including any person or entity who sets up a “plug and play” Internet radio system in a few minutes cannot be considered meeting the requirements of a clear and straightforward membership that is well defined.

In the Application, the EBU states that in order to qualify, “Internet radios need to meet certain minimum standards” without being specific on (i) what these standards are, (ii) who has established such standards, and (iii) how the EBU is going to verify whether these standards are met.

It is not clear to Requesters how the CPE panel could agree that the EBU serves the best interest of their community if the “standards” referred to in the Application simply do not exist. Indeed, there are no such “minimum standards on streaming.” Furthermore, there simply is no authoritative written definition, limit, or rule approved and monitored for compliance by an authoritative agency (or professional or recognized body) as a minimum acceptable benchmark.

Additionally, according to Wikipedia, “Podcasting contrasts with Internet streaming,” which means that podcasters would not meet any standards relating to streaming.

Requesters believe that the standards that will be utilized and enforced by the EBU should be available for review. Indeed, standards in broadcasting are non-proprietary and by nature of the development of standards, the standards for worldwide radio are collaborative. But no clear reference has been made in the Application to any of these standards, which is likely because they do not exist ...

In so far and to the extent these standards are Internet-based, they likely need to be developed within ISOC or the 3WC, and not the EBU; standards for international radio are developed within the ITU, of which the EBU is a mere member. Therefore, the EBU does not have any standing in the development or propagation of any of the standards that exist or will be established in the future within the radio industry.

In the Determination, the Community Priority Evaluation panel acknowledges – and in the opinion of the Requesters rightfully so – that the community invoked by the EBU in the Application does not meet the requirements of “Organization”. According to the Determination:

*“Based on the information provided in the application materials and the Panel’s research, there is no such entity that organizes the community defined in the application. Therefore, as there is no entity that is mainly dedicated to the community as defined in the .RADIO application, as the Panel has determined, there cannot be documented evidence of community activities”.*⁴

Therefore, this has to be considered a clear contradiction with the Determination provided under the Delineation criterion, where the Community Priority Evaluation panel have found that the “membership in the (industry) community is sufficiently structured as the requirements listed in the community definition above show”.

Based on this, Requesters cannot accept the contradiction in the EIU’s acknowledgement of the fact that the so-called community defined by the EBU is on the one hand *insufficiently organized*, but on the other hand is found to be “sufficiently structured”.

Based on the above arguments, Requesters respectfully request ICANN to reconsider the Determination by the EIU in relation to the “Delineation” criterion set out in the Applicant Guidebook.

⁴ Determination, Page 3

10.3.2. In relation to the criteria “Nexus” and “Uniqueness”:

According to the Determination:

“The Community Priority Evaluation panel determined that the application met the criterion for Uniqueness as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the string has no other significant meaning beyond identifying the community described in the application.

[...]

To fulfill the requirements for Uniqueness, the string must have no other significant meaning beyond identifying the community described in the application. The string as defined in the application demonstrates uniqueness, as the string does not have any other meaning beyond identifying the community described in the application.”

A simple search on Wikipedia shows that the word “radio” extends far beyond the narrow concept as described in the application, and in particular in the description provided in the NAICS’ “radio industry” definition, as the term “radio” also covers additional uses of the “radiation of electromagnetic signals through the atmosphere or free space”, such as:

- Telephony;
- Video;
- Navigation (used in, e.g., satellite navigation systems, such as GPS);
- Radar;
- Heating (used in, e.g., microwaves and induction furnaces); and
- Radio control.⁵

(see print-out contained in **Annex 4**).

Considering the fact that the EIU has referred to definitions contained in the Oxford English Dictionaries in various determinations in relation other community-based applications, Requesters refer – in view of consistency to the descriptions contained therein and their respective quotations (see print-out contained in **Annex 5**).

By way of example, Requesters point out to the fact that manufacturers of radio transmitters or receivers – both critical elements and tools in order to be able to send and receive broadcasted radio programs – have to be added to this list, and do not form part of the definition of the NAICS definition since they do not meet Criteria 2 and 3 discussed in Section 10.3.1 above ...

⁵ See <http://en.wikipedia.org/wiki/Radio> and [http://en.wikipedia.org/wiki/Radio \(disambiguation\)](http://en.wikipedia.org/wiki/Radio_(disambiguation)).

Considering the above, it is obvious that the other uses and meanings of the word “radio” have been disregarded by the Community Priority Evaluation panel, which becomes obvious when the same standards and references are used as the EIU has done in other determinations regarding community-based applications. Indeed, in various cases, when testing this criterion, the EIU has referred to the definition contained in the Oxford English Dictionary. Requesters submit as Annex 5 to this Reconsideration Request the list of definitions and descriptions contained in the on line version of the Oxford English Dictionary, which makes it obvious from the outset that the word “radio” has various other meanings that fall outside of the remit of the EBU’s concept.

The Requesters are therefore of the opinion that, if the EIU would use the Oxford English Dictionary as a standard for testing this criterion, it needs to do so consistently in all of the cases under their review. If not, the EIU has been using a double standard, without providing any proper justification for doing so.

Therefore, Requesters respectfully request ICANN to reconsider the scoring given by the EIU in relation to the Guidebook criteria “Nexus” and “Uniqueness”, because:

- the meaning of the word “radio” is by all means not “unique” (which can be easily retrieved on a commonly known website such as Wikipedia or the Oxford English Dictionary); and
- the uses and meanings listed above (including references mentioned by Wikipedia and Oxford English Dictionary) are unrelated to any of the activities carried out by the EBU and the organizations supporting the Application.

Requesters are therefore of the opinion that the .RADIO gTLD over-reaches substantially beyond the community described by the EBU, because the string indicates a wider thematic remit than the community has. For this reason, Requesters request ICANN to reconsider the Determination and provide for a score of zero (“0”) points on this criterion.

10.3.3. Registration Policies – Eligibility; Name Selection; Content and Use; Enforcement

The Community Priority Evaluation panel has determined that “[...] *the application demonstrates adherence to this requirement by restricting eligibility to the community categories mentioned in Delineation, and additionally requiring the registered domain name be “accepted as legitimate, and beneficial to the cause and value of the radio industry; and commensurate with the role and importance of the registered domain name; and in good faith at the time of registration and thereafter.”*”

Considering the fact that Requesters have requested further clarifications and information on the information and criteria used by the Community Priority Evaluation panel in § I. above, it is unclear which standards and criteria are going to be used, implemented and enforced by the EBU in view of ensuring that only members of the “radio community” or “radio industry” can register domain names.

Especially since Requesters have established that, on the basis of the criteria set out in the Application, anyone with some affinity with the concept “radio” are considered by the EBU and the Community Evaluation Panel as members of the “radio community”, Requesters would like to obtain the information and arguments used by this panel in determining that the criteria for eligibility are satisfied, even when disregarding parties who are active in other, albeit adjacent industries, such as the video, radar, navigation, and heating industry, as well as manufacturers of radio transmitters and receivers.

Furthermore, since the standard propagated by the EBU in relation to name selection is that *“the domain name must be commensurate with the role of the registered domain, and with the role and importance of the domain name based on the meaning an average user would reasonably assume in the context of the domain name”*, Requesters would like to obtain the information, arguments, and the application thereof in concrete use cases they have developed on the basis of the information contained in the Application in order to determine that the *“registration policies for name selection for registrants must be consistent with the articulated, community-based purpose of the applied-for gTLD”*, especially since Requesters do not understand what the EBU means by:

- a) “the domain name must be commensurate with the role of the registered domain”;
- b) “the domain name must be commensurate with [...] the role and importance of the domain name”;
- c) the criteria the “meaning” of the domain name, “average user”, and such average user’s “reasonable assumption”,

and the standards and criteria used by ICANN and the Community Priority Evaluation panel in establishing that – on the basis of these requirements – names can be excluded from registration because they have no connection with the so-called “radio community”, and how these vague requirements can possibly be enforced against the registrant.

The same question arises in relation to the standards and criteria applied by the EBU and evaluated positively by ICANN and the Community Priority Evaluation panel in terms of the “Contents and Use” criterion.

For these reasons, the Requesters are of the opinion that the scoring in relation to Registration Policies needs to be reconsidered.

10.3.4. In relation to the criterion “Community Endorsement”:

The Community Priority Evaluation panel determined that the EBU “*was not the recognized community institution(s)/member organization(s)*”, which is a view that is supported by the Requesters: the EBU represents, as dictated by their bylaws, “over the air” terrestrial broadcasting (as defined by the ITU). The EBU does not have any “non-radio”, “non-TV station” or “Internet only” webcasters as members, let alone “non-terrestrial podcasters”. Nonetheless, the EBU includes them in the community definition. Furthermore, the EBU does not include other radio communities (as defined by the ITU) in its community definition.

However, the Community Priority Evaluation panel has determined that the EBU “[...] *possesses documented support from institutions / organizations representing a majority of the community addressed.*”

This is factually incorrect, which can be easily verified by using the criteria provide by the CPE Panel and by making reference to the World CIA Factbook: although the EBU states that they represent about 50,000 radio stations in the world, the “Member Unions” that have provided their support only account for 589 full members that are involved in the “radio” business:

- ABU - Asia Pacific Broadcasting Union: 90 members
- ASBU - Arab States Broadcasting Union: 28 members
- AUB - African Broadcasting Union: 39 members
- CBU - Caribbean Broadcasting Union: 17 members
- AIR/IAB - International Association of Broadcasting: 24 members
- NABA - North American Broadcasting Association: 391 members⁶
- OTI - Organización de Telecomunicaciones Iberoamericanas: 0 members.⁷

Requesters note that the majority of these “members” are state-owned or relate to public broadcasters. Furthermore, the activities of quite a number of these members relates to television broadcasting, and therefore have to be disregarded in the context of the .RADIO CPE.

Furthermore, in looking at the proponents of the EBU’s Application and objections, Requesters noted that being a member of a union or a broadcasting association does not necessarily entail that each member supports the endorsement of such organization. Indeed, a status as affiliate member of one of the unions only entitles them to an individual vote at maximum. Therefore, it is

⁶ Requesters note that the NABA did not have a radio committee until 2014 ...

⁷ According to the website of the OTI, this organization promotes, maintains and enhances relationships between agencies and TV companies and / or linked to television – see <http://www.oti.tv/quienes-somos>.

unknown and unclear whether an individual member of one of the quoted unions or organizations effectively supports the EBU's Application ...

In view of the above, Requesters have demonstrated that the letters of support were submitted by institutions / organizations representing a vast *minority* of the community addressed, and that the score provided in the Determination must be reconsidered.

10.3.5. In relation to the criterion "Opposition":

Requesters do not understand the reasons why and the criteria against which the public comments, submitted by or on behalf of the Requesters to ICANN in relation to the Application, which all contained strong opposition against ICANN awarding the .RADIO gTLD to the Applicant have been considered "of no relevance" or that each of the Requesters is to be considered as a "group of negligible size".

The outcome of the Community Priority Evaluation is particularly surprising, considering the fact that one of the Requesters, BRS Media Inc., is the registry for the .FM TLD, which is serving many domain name registrants relating to radio.

11. Are you bringing this Reconsideration Request on behalf of multiple persons or entities? (Check one)

Yes

No

Requesters' consider this consolidated filing appropriate since the alleged causal connection and the resulting harm is the same for all of the Requesters. In each of the individual Requesters' views, they have demonstrated that it has been materially harmed and adversely impacted by the action or inaction giving rise to the request, as required by Article IV, Section 2, (8) of ICANN's By-Laws.

11a. If yes, Is the causal connection between the circumstances of the Reconsideration Request and the harm the same for all of the complaining parties? Explain.

Yes. All of the Requesters are applicants for the .RADIO gTLD who are directly affected by the Determination, which – ultimately – would cause irreparable harm to Requesters if such Determination would be final.

However, Requesters acknowledge that, most likely and ultimately, only one of

the Requestors or the EBU will become the Registry Operator for the .RADIO gTLD.

Do you have any documents you want to provide to ICANN?

Pending Requesters’ request under the Documentary Information Disclosure Policy, Requesters are not providing any specific documents to ICANN, but reserve the right to do so as a follow-up to this Reconsideration Request or in the context of one or more new Reconsideration Requests. Requesters recognize and acknowledge that any such additional Reconsideration Requests may be consolidated by the Board Governance Committee.

Terms and Conditions for Submission of Reconsideration Requests

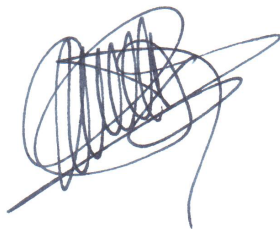
The Board Governance Committee has the ability to consolidate the consideration of Reconsideration Requests if the issues stated within are sufficiently similar.

The Board Governance Committee may dismiss Reconsideration Requests that are querulous or vexatious.

Hearings are not required in the Reconsideration Process, however Requestors may request a hearing. The BGC retains the absolute discretion to determine whether a hearing is appropriate, and to call people before it for a hearing.

The BGC may take a decision on reconsideration of requests relating to staff action/inaction without reference to the full ICANN Board. Whether recommendations will issue to the ICANN Board is within the discretion of the BGC.

The ICANN Board of Director’s decision on the BGC’s reconsideration recommendation is final and not subject to a reconsideration request.



10 November 2014

Signature

Date

Annex 1: Determination by the Community Priority Evaluation Panel in

connection with the .RADIO gTLD Application dated September 10, 2014

Annex 2: Requesters' Request for Information dated September 26, 2014

Annex 3: ICANN's Response to Requesters' Request for Information

Annex 4: Print-out from Wikipedia

Annex 5: Print-out from online version of the Oxford English Dictionary

Annex 1

New gTLD Program
Community Priority Evaluation Report
 Report Date: 10 September 2014

Application ID:	1-1083-39123
Applied-for String:	RADIO
Applicant Name:	European Broadcasting Union

Overall Community Priority Evaluation Summary

Community Priority Evaluation Result	Prevailed
<p>Thank you for your participation in the New gTLD Program. After careful consideration and extensive review of the information provided in your application, including documents of support, the Community Priority Evaluation panel determined that the application met the requirements specified in the Applicant Guidebook. Your application prevailed in Community Priority Evaluation.</p>	

Panel Summary

Overall Scoring	14 Point(s)	
Criteria	Earned	Achievable
#1: Community Establishment	3	4
#2: Nexus between Proposed String and Community	3	4
#3: Registration Policies	4	4
#4: Community Endorsement	4	4
Total	14	16
Minimum Required Total Score to Pass 14		

Criterion #1: Community Establishment	3/4 Point(s)
1-A Delineation	1/2 Point(s)
<p>The Community Priority Evaluation panel determined that the community as defined in the application partially met the criterion for Delineation as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as it is clearly delineated and pre-existing, but, as defined, is not sufficiently organized. The application received a score of 1 out of 2 points under criterion 1-A: Delineation.</p> <p><u>Delineation</u> Two conditions must be met to fulfill the requirements for delineation: there must be a clear, straightforward membership definition and there must be awareness and recognition of a community (as defined by the applicant) among its members.</p> <p>The community defined in the application (“RADIO”) is, as follows:</p> <p style="padding-left: 40px;">The Radio industry is composed of a huge number of very diverse radio broadcasters: public and private; international and local; commercial or community-oriented; general purpose, or sector-</p>	

specific; talk or music; big and small. All licensed radio broadcasters are part of the .radio community, and so are the associations, federations and unions they have created (such as the EBU, applicant for the .radio TLD with the support of its sister Unions; see below for more details on Radio industry representativeness). Also included are the radio professionals, those making radio the fundamental communications tool that it is.

However, the Radio industry keeps evolving and today, many stations are not only broadcasting in the traditional sense, but also webcasting and streaming their audio content via the Internet. Some are not broadcasters in the traditional sense: Internet radios are also part of the Radio community, and as such will be acknowledged by .radio TLD, as will podcasters. In all cases certain minimum standards on streaming or updating schedules will apply.

The .radio community also comprises the often overlooked amateur radio, which uses radio frequencies for communications to small circles of the public. Licensed radio amateurs and their clubs will also be part of the .radio community.

Finally, the community includes a variety of companies providing specific services or products to the Radio industry.

This community definition shows a clear and straightforward membership and is therefore well defined. Association with, and membership in, the radio community can be verified through licenses held by professional and amateur radio broadcasters; membership in radio-related associations, clubs and unions; internet radios that meet certain minimum standards; radio-related service providers that can be identified through trademarks; and radio industry partners and providers.

In addition, the community as defined in the application has awareness and recognition among its members. This is because the community as defined consists of entities and individuals that are in the radio industry¹, and as participants in this clearly defined industry, they have an awareness and recognition of their inclusion in the industry community. In addition, membership in the (industry) community is sufficiently structured, as the requirements listed in the community definition above show.

The Community Priority Evaluation panel determined that the community as defined in the application satisfies both of the conditions to fulfill the requirements for Delineation.

Organization

Two conditions need to be met to fulfill the requirements for organization: there must be at least one entity mainly dedicated to the community, and there must be documented evidence of community activities.

The community as defined in the application does not have one entity mainly dedicated to the community. There are several entities that represent parts of the radio community, such as the World Broadcasting Unions (WBU), the Association for International Broadcasting, the Association of European Radios, the Association Mondiale des Radiodiffuseurs Communautaires, the European Association of Television and Radio Sales Houses, the Union Radiophonique et Télévisuelle Internationale, and the Internet Media Device Alliance. Based on the Panel's research, these entities only represent certain segments of the community as defined by the applicant. For example, the WBU is the umbrella organization for eight regional broadcasting unions, but does not represent amateur radio. There is no entity that represents all of the radio member categories outlined by the applicant. According to the application:

¹ The radio industry is included in the North American Industrial Classification System (NAICS). It defines this industry as, "Establishments primarily engaged in broadcasting aural programs by radio to the public. Included in this industry are commercial, religious, educational, and other radio stations. Also included here are establishments primarily engaged in radio broadcasting and which produce radio program materials." This definition of the industry includes the vast majority of entities included in the defined community.

The Radio community is structured mainly under 8 world broadcasting Unions which represent radio broadcasting interests at the World Radio Frequencies Conferences and coordinate their work through the WBU, as described in response to Question 11H.

The WBU works through a number of permanent working commissions, such as the Technical Committee, which deals with technical standardization; the Sports Committee, dealing with the coverage of world sports events (such as Olympic Games and football world championships); ISOG (International Satellite Operations Group), dealing with satellite contribution circuit issues. Besides the WBU, other specialized broadcasting associations represent specific radio interests, such as the already mentioned AMARC and AER.

According to the AGB, "organized" implies that there is at least one entity mainly dedicated to the community, with documented evidence of community activities." As described above, there is no entity(ies) that represents all of the radio member categories outlined by the applicant. An "organized" community is one that is represented by at least one entity that encompasses the entire community as defined by the applicant. For example, there should be at least one entity that encompasses and organizes: "radio broadcasters, the associations, federations and unions they have created, radio professionals, Internet radios, podcasters, amateur radio (and their clubs), and companies providing specific services or products to the Radio industry." Based on information provided in the application materials and the Panel's research, there is no such entity that organizes the community defined in the application. Therefore, as there is no entity that is mainly dedicated to the community as defined in the .RADIO application, as the Panel has determined, there cannot be documented evidence of community activities.

The Community Priority Evaluation panel determined that the community as defined in the application does not satisfy either of the two conditions to fulfill the requirements for organization.

Pre-existence

To fulfill the requirements for pre-existence, the community must have been active prior to September 2007 (when the new gTLD policy recommendations were completed).

The community as defined in the application was active prior to September 2007. Radio broadcast technologies have existed in one form or another for nearly a century. As the industry has evolved² through the uptake of new technologies, so too has industry membership. For example, in the early years of the industry, members of the radio industry included radio professionals, broadcasters and companies providing products to the industry, amongst others. With the advent of the internet and other radio technologies, the community has expanded to include Internet radios, podcasters and others. The Panel acknowledges that not all elements of the community defined in the application have been in existence since the dawn of the industry; however, the proposed community segments have been active prior to September 2007.

The Community Priority Evaluation panel determined that the community as defined in the application fulfills the requirements for Pre-existence.

1-B Extension

2/2 Point(s)

The Community Priority Evaluation panel determined that the community as identified in the application met the criterion for Extension specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the application demonstrates considerable size and longevity for the community. The application received a maximum score of 2 points under criterion 1-B: Extension.

² According to the US Federal Communications Commission, in 1906 the first program including speech and music was transmitted over the radio; by 1912 the US government put in place regulations for radio stations and operators. See http://transition.fcc.gov/omd/history/radio/documents/short_history.pdf

Size

Two conditions must be met to fulfill the requirements for size: the community must be of considerable size, and it must display an awareness and recognition of a community among its members.

The community as defined in the application is of a considerable size. The community for .RADIO as defined in the application is large in terms of the number of members. According to the application:

Currently, there are about 50,000 radio stations worldwide, according to the figure published by CIA World Facts on their website. In addition, there are at least another 50,000 web radios.

Moreover, the community as defined in the application has awareness and recognition among its members. This is because the community as defined consists of entities and individuals that are in the radio industry³, and as participants in this clearly defined industry, they have an awareness and recognition of their inclusion in the industry community.

The Community Priority Evaluation panel determined that the community as defined in the application satisfies both the conditions to fulfill the requirements for Size.

Longevity

Two conditions must be met to fulfill the requirements for longevity: the community must demonstrate longevity and it must display an awareness and recognition of a community among its members.

The community as defined in the application demonstrates longevity. The pursuits of the .RADIO community are of a lasting, non-transient nature. Radio services have, as noted, existed for more than a century and are likely to continue, although technological advances may change form and function.

Moreover, as mentioned previously, the community as defined in the application has awareness and recognition among its members. This is because the community as defined consists of entities and individuals that are in the radio industry⁴, and as participants in this clearly defined industry, they have an awareness and recognition of their inclusion in the industry community.

The Community Priority Evaluation panel determined that the community as defined in the application satisfies both the conditions to fulfill the requirements for Longevity.

Criterion #2: Nexus between Proposed String and Community

3/4 Point(s)

2-A Nexus

2/3 Point(s)

The Community Priority Evaluation panel determined that the application partially met the criterion for Nexus as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook. The string “identifies” the name of the community as defined in the application, without over-reaching substantially beyond the community, but it does not “match” the name of the community as defined. The application received a score of 2 out of 3 points under criterion 2-A: Nexus.

To receive the maximum score for Nexus, the applied-for string must “match” the name of the community or be a well-known short-form or abbreviation of the community name. To receive a partial score for Nexus, the applied-for string must “identify” the community. “Identify” means that the applied-for string should closely describe the community or the community members, without over-reaching substantially beyond the community.

The applied-for string (.RADIO) identifies the name of the community. According to the applicant:

³ Ibid

⁴ Ibid

Radio means the operators, services and technologies defined here as the Radio community. Radio also means, and is, audio broadcasting. The station broadcasting or streaming that audio content is radio, and the company performing the audio broadcasting is radio. A radio is the receiver used by the listener. Radio is the name everybody uses to refer to the entire industry, and the whole community.

With the advent of streaming via the Internet and the continuous delivery of audio content to broad groups of listeners, we now often refer to the new services as web, net or Internet radio.

The Radio community could not find any other name, even vaguely appropriate, to designate the TLD for its community. .radio is the TLD for the Radio community and could not be anything else. It is perfectly tuned.

The string closely describes the community, without overreaching substantially beyond the community. The string identifies the name of the core community members (i.e. licensed professional and amateur radio broadcasters and their associated unions and clubs, and Internet radio). However, the community, as defined in the application, also includes some entities that are only tangentially related to radio, such as companies providing specific services or products to radio broadcasting organizations and which may not be automatically associated with the gTLD string. For example, network interface equipment and software providers to the industry, based on the Panel's research, would not likely be associated with the word RADIO⁵. However, these entities are considered to comprise only a small part of the community. Since only a small part of the community as defined by the applicant extends beyond the reference of the string, it is not a substantial over-reach. Therefore, the string identifies the community, as the public will generally associate the string with the community as defined by the applicant.

The Community Priority Evaluation panel determined that the applied-for string identifies the name of the community as defined in the application. It therefore partially meets the requirements for Nexus.

2-B Uniqueness

1/1 Point(s)

The Community Priority Evaluation panel determined that the application met the criterion for Uniqueness as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the string has no other significant meaning beyond identifying the community described in the application. The application received a maximum score of 1 point under criterion 2-B: Uniqueness.

To fulfill the requirements for Uniqueness, the string must have no other significant meaning beyond identifying the community described in the application. The string as defined in the application demonstrates uniqueness, as the string does not have any other meaning beyond identifying the community described in the application. The Community Priority Evaluation panel determined that the applied-for string satisfies the condition to fulfill the requirements for Uniqueness.

Criterion #3: Registration Policies

4/4 Point(s)

3-A Eligibility

1/1 Point(s)

The Community Priority Evaluation panel determined that the application met the criterion for Eligibility as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as eligibility

⁵ There are numerous definitions of the word radio. These include: (a) the transmission and reception of electromagnetic waves of radio frequency, especially those carrying sound messages; (b) the activity or industry of broadcasting sound programs to the public; (c) an apparatus for receiving radio programs. Definition (b) closely reflects the core community as defined by the applicant, which includes: radio broadcasters, the associations, federations and unions they have created, radio professionals, Internet radios, podcasters, and amateur radio (and their clubs). However, the community members that provide "specific services or products to the Radio industry", such as software or interface equipment, would not be associated with the term "radio" by the general public.

is restricted to community members. The application received a maximum score of 1 point under criterion 3-A: Eligibility.

To fulfill the requirements for Eligibility, the registration policies must restrict the eligibility of prospective registrants to community members. The application demonstrates adherence to this requirement by restricting eligibility to the community categories mentioned in Delineation, and additionally requiring that the registered domain name be “accepted as legitimate; and beneficial to the cause and values of the radio industry; and commensurate with the role and importance of the registered domain name; and in good faith at the time of registration and thereafter.” (Comprehensive details are provided in Section 20e of the applicant documentation). The Community Priority Evaluation panel determined that the application satisfies the condition to fulfill the requirements for Eligibility.

3-B Name Selection

1/1 Point(s)

The Community Priority Evaluation panel determined that the application met the criterion for Name Selection as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as name selection rules are consistent with the articulated community-based purpose of the applied-for TLD. The application received a maximum score of 1 point under criterion 3-B: Name Selection.

To fulfill the requirements for Name Selection, the registration policies for name selection for registrants must be consistent with the articulated, community-based purpose of the applied-for gTLD. The application demonstrates adherence to this requirement by specifying that the registrant’s nexus with the radio community and use of the domain must be commensurate with the role of the registered domain, and with the role and importance of the domain name based on the meaning an average user would reasonably assume in the context of the domain name. (Comprehensive details are provided in Section 20e of the applicant documentation). The Community Priority Evaluation panel determined that the application satisfies the condition to fulfill the requirements for Name Selection.

3-C Content and Use

1/1 Point(s)

The Community Priority Evaluation panel determined that the application met the criterion for Content and Use as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the rules for content and use are consistent with the articulated community-based purpose of the applied-for TLD. The application received a maximum score of 1 point under criterion 3-C: Content and Use.

To fulfill the requirements for Content and Use, the registration policies must include rules for content and use for registrants that are consistent with the articulated community-based purpose of the applied-for gTLD. The application demonstrates adherence to this requirement by specifying that use of the domain name must be beneficial to the cause and values of the radio industry, and commensurate with the role and importance of the registered domain name, etc. (Comprehensive details are provided in Section 20e of the applicant documentation). The Community Priority Evaluation panel determined that the application satisfies the condition to fulfill the requirements for Content and Use.

3-D Enforcement

1/1 Point(s)

The Community Priority Evaluation panel determined that the application met the criterion for Enforcement as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the application provided specific enforcement measures as well as appropriate appeal mechanisms. The application received a maximum score of 1 point under criterion 3-D: Enforcement.

Two conditions must be met to fulfill the requirements for Enforcement: the registration policies must include specific enforcement measures constituting a coherent set, and there must be appropriate appeals mechanisms. The applicant outlined policies that include specific enforcement measures constituting a coherent set. The enforcement program is based on random checks, and if the content or use of an existing domain name shows bad faith, it will be suspended. There is also an appeals mechanism, which is managed in

the first instance by the registry, with appeals heard by an independent, alternative dispute resolution provider. (Comprehensive details are provided in Section 20e of the applicant documentation). The Community Priority Evaluation panel determined that the application satisfies both conditions to fulfill the requirements for Enforcement.

Criterion #4: Community Endorsement	4/4 Point(s)
4-A Support	2/2 Point(s)
<p>The Community Priority Evaluation panel determined that the application fully met the criterion for Support specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the applicant had documented support from the recognized community institution(s)/member organization(s). The application received a maximum score of 2 points under criterion 4-A: Support.</p> <p>To receive the maximum score for Support, the applicant is, or has documented support from, the recognized community institution(s)/member organization(s), or has otherwise documented authority to represent the community. “Recognized” means those institution(s)/organization(s) that, through membership or otherwise, are clearly recognized by the community members as representative of the community. To receive a partial score for Support, the applicant must have documented support from at least one group with relevance. “Relevance” refers to the communities explicitly and implicitly addressed.</p> <p>The Community Priority Evaluation panel determined that the applicant was not the recognized community institution(s)/member organization(s). However, the applicant possesses documented support from institutions/organizations representing a majority of the community addressed, and this documentation contained a description of the process and rationale used in arriving at the expression of support. The applicant received support from a broad range of recognized community institutions/member organizations, which represented different segments of the community as defined by the applicant. These entities represented a majority of the overall community. The Community Priority Evaluation Panel determined that the applicant fully satisfies the requirements for Support.</p>	
4-B Opposition	2/2 Point(s)
<p>The Community Priority Evaluation panel determined that the application met the criterion for Opposition specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the application did not receive any relevant opposition. The application received the maximum score of 2 points under criterion 4-B: Opposition.</p> <p>To receive the maximum score for Opposition, the application must not have received any opposition of relevance. To receive a partial score for Opposition, the application must have received opposition from, at most, one group of non-negligible size.</p> <p>The application received letters of opposition, which were determined not to be relevant, as they were (1) from individuals or groups of negligible size, or (2) were not from communities either explicitly mentioned in the application nor from those with an implicit association to such communities. The Community Priority Evaluation Panel determined that the applicant satisfies the requirements for Opposition.</p>	

Disclaimer: Please note that these Community Priority Evaluation results do not necessarily determine the final result of the application. In limited cases the results might be subject to change. These results do not constitute a waiver or amendment of any provision of the Applicant Guidebook or the Registry Agreement. For updated application status and complete details on the program, please refer to the Applicant Guidebook and the ICANN New gTLDs microsite at <newgtlds.icann.org>.

Annex 2

ICANN
12025 Waterfront Drive, Suite 300
Los Angeles, CA 90094-2536
USA

26 September 2014

By email: didp@icann.org

Dear Madam,
Dear Sir,

**.RADIO Community Priority Evaluation for Application ID 1-1083-39123
Request under ICANN's Documentary Information Disclosure Policy**

This request is submitted under ICANN's Documentary Information Disclosure Policy on behalf of Afilias Limited, BRS Media Inc., and Tin Dale, LLC, applicants for the .RADIO gTLD (hereinafter referred to as "Requesters")¹ in relation to ICANN's Community Priority Evaluation panel's determination that the European Broadcasting Union's application for the .RADIO gTLD (application ID 1-1083-39123; hereinafter referred to as the "Application") has prevailed in Community Priority Evaluation (hereinafter: the "Determination").

Context

Reference is made to the Community Evaluation Report that has been released by ICANN and published on the ICANN website under URL
<https://www.icann.org/sites/default/files/tlds/radio/radio-cpe-1-1083-39123-en.pdf>.

According to this Report: "[t]he Community Priority Evaluation panel determined that the application met the requirements specified in the Applicant Guidebook", confirming that the application for the .RADIO gTLD that has been submitted by the European Broadcasting Union (hereinafter referred to as "EBU") has "prevailed in Community Priority Evaluation".

Considering the fact that, according to the processes and procedures set out in ICANN's Applicant Guidebook, this Determination would result in ICANN (i) awarding the .RADIO gTLD to the EBU, and – hence – (ii) not allowing the Requesters to proceed with their respective applications, this decision materially impacts the applications submitted by the latter parties.

According to ICANN, "ICANN's Documentary Information Disclosure Policy (DIDP) is intended to ensure that information contained in documents concerning ICANN's operational activities, and within ICANN's possession, custody, or control, is made available to the public unless there is a compelling reason for confidentiality."²

¹ Respectively Application IDs 1-868-75631; 1-994-75477; and 1-1593-8224.

² See <https://www.icann.org/resources/pages/didp-2012-02-25-en>.

Request

In view of transparency of ICANN's decision-making process, the Requesters would like to obtain the following information from ICANN under the Documentary Information Disclosure Policy:

- 1) the agreement(s) between ICANN and the organizations and individuals involved in the Community Priority Evaluation, in particular the representations and warranties given and quality standards to be applied by such organizations and individuals;
- 2) policies, guidelines, directives, instructions or guidance given by ICANN relating to the Community Priority Evaluation process;
- 3) internal reports, notes, meeting minutes drawn up by or on behalf of ICANN, the Community Priority Panels, and other individuals or organizations involved in the Community Priority Evaluation in relation to the Application;
- 4) detailed information in relation to (i) the information reviewed, (ii) criteria and standards used, (iii) arguments exchanged, (iv) information disregarded or considered irrelevant, and (v) scores given by the Community Priority Evaluation panel in view of the criteria set out in the Applicant Guidebook, and more in particular:

I. In relation to the criterion "Delineation":

- a. According to the Determination, the community defined in the Application is as follows:

The Radio industry is composed of a huge number of very diverse radio broadcasters: public and private; international and local; commercial or community-oriented; general purpose, or sector-specific; talk or music; big and small. All licensed radio broadcasters are part of the .radio community, and so are the associations, federations and unions they have created (such as the EBU, applicant for the .radio TLD with the support of its sister Unions; see below for more details on Radio industry representativeness). Also included are the radio professionals, those making radio the fundamental communications tool that it is.

However, the Radio industry keeps evolving and today, many stations are not only broadcasting in the traditional sense, but also webcasting and streaming their audio content via the Internet. Some are not broadcasters in the traditional sense: Internet radios are also part of the Radio community, and as such will be acknowledged by .radio TLD, as will podcasters. In all cases certain minimum standards on streaming or updating schedules will apply.

The .radio community also comprises the often overlooked amateur radio, which uses radio frequencies for communications to small circles of the public. Licensed radio amateurs and their clubs will also be part of the .radio community.

Finally, the community includes a variety of companies providing specific services or products to the Radio industry.

- b. The community definition contained in the Application refers to the definition of the “radio industry” as included in the North American Industrial Classification System (NAICS). This definition reads as follows:

“Establishments primarily engaged in broadcasting aural programs by radio to the public. Included in this industry are commercial, religious, educational, and other radio stations. Also included here are establishments primarily engaged in radio broadcasting and which produce radio program materials.”³

Key elements in this definition include:

- Criterion 1: members of the radio industry are “establishments” and “radio stations”;
 - Criterion 2: they are “primarily engaged in radio broadcasting”; and
 - Criterion 3: they “produce radio program materials”.
- c. Requesters would like to obtain further information on the reasons for acknowledging that certain “members” of the “radio community” listed by the Applicant, such as “radio professionals”, “licensed radio amateurs” and “podcasters” meet Criterion 1 set out above;
- d. Requesters would like to obtain further information on the reasons for acknowledging that certain “individuals that are in the radio industry” to which the Determination refers, even expressly referencing the NAICS definition in the footnote immediately thereafter, meet Criterion 1 set out above, as an individual cannot be considered an “establishment” nor a “radio station”;
- e. Requesters would like to obtain further information on the reasons for acknowledging that certain “members” of the “radio community” listed by the Applicant, such as “podcasters” meet Criterion 2 set out above;
- f. It is not clear to Requesters how the concept of “a variety of companies” rhymes with the concept of a “clear and straightforward membership that is well-defined”. Therefore, Requesters would like to obtain further information on the criteria used by and the determinations made by ICANN and the Community Priority Evaluation panel in this respect.

Furthermore, Requesters would like to obtain further information on the reasons for acknowledging that certain “a variety of companies providing specific services or products to the Radio industry” meet Criteria 1, 2 or 3 set out above, considering the fact that the wording “variety of companies” and “specific services or products” are obviously much broader than the criteria set forth in the NAICS definition.

This is more in particular the case when these companies are rendering “specific” services or products, without expressly mentioning what these are, or what the criteria are for these services or products to be “specific”. Therefore, Requesters would like to obtain further information on the

³ Reference is made to footnote 1 on Page 2 of the Determination.

criteria used by and the determinations made by ICANN and the Community Priority Evaluation panel in view of these criteria;

- g. Requesters would like to obtain further information on the criteria used by and the determinations made by ICANN and the Community Priority Evaluation panel for acknowledging that only companies “providing specific services or products to the Radio industry”, etc. can be considered members of a community that “shows a clear and straightforward membership, and is therefore well-defined”.

Requesters are unaware of any specific membership criteria that would apply to “radio professionals”, “licensed radio amateurs”, “podcasters”, and “a wide variety of companies providing specific services or products to the Radio industry”, apart from the fact that these individuals or organisations have some affinity with the medium “radio”. For instance, under the Community Evaluation Panel’s assessment, every employee of a radio company or station can register a .radio domain name, even if such employee’s actual professional activities are unrelated to the radio medium as such.

- h. Insofar and to the extent these products and services are specific to the “radio industry”, it is not clear to the Requesters how, on the one hand, the reference made in the Application that the so-called “radio community” includes a “wide variety of members”, including “radio-related providers that can be identified through trademarks”, and “radio industry partners and providers” whereas, according to the NAICS definition, the membership to the radio industry is much more narrow considering the three criteria set out above.

Based on this, Requesters would like to obtain further information on the criteria used by and the determinations made by ICANN and the Community Priority Evaluation panel in view of these criteria.

- i. It is commonly known that various companies are offering “Internet radio software” to Internet users, enabling them to operate an Internet radio and stream live audio instantly over the Internet. Considering the fact that – according to the Application – Internet radios are also “part of the Radio community”, it is obvious that including any person or entity who sets up a “plug and play” Internet radio system in a few minutes cannot be considered meeting the requirements of a clear and straightforward membership that is well defined.

Given this, Requesters would like to obtain further information on the criteria used by and the determinations made by ICANN and the Community Priority Evaluation panel in view of this criterion, as well as in view of Criteria 1 (“establishments and radio stations”) and 2 (“broadcasting”).

In the Application, the EBU states that in order to qualify, “Internet radios need to meet certain minimum standards” without being specific on what these standards are and how the EBU is going to verify whether these standards are met.

- j. In the Determination, ICANN and the Community Priority Evaluation panel acknowledge – and in the opinion of the Requesters rightfully so – that the

community invoked by the EBU in the Application does not meet the requirements of “Organization”. According to the Determination:

“Based on the information provided in the application materials and the Panel’s research, there is no such entity that organizes the community defined in the application. Therefore, as there is no entity that is mainly dedicated to the community as defined in the .RADIO application, as the Panel has determined, there cannot be documented evidence of community activities”.⁴

In light of this Determination, there is a clear contradiction with the Determination provided under the Delineation criterion, where ICANN and the Community Priority Evaluation panel have found that the “membership in the (industry) community is sufficiently structured as the requirements listed in the community definition above show.

Based on this, Requesters would like to obtain further information on the criteria and arguments used and provided for accepting that the community is on the one hand *insufficiently organized*, but on the other hand is found to be *“sufficiently structured”*.

II. In relation to the criteria “Nexus” and “Uniqueness”:

According to the Determination:

“The Community Priority Evaluation panel determined that the application met the criterion for Uniqueness as specified in section 4.2.3 (Community Priority Evaluation Criteria) of the Applicant Guidebook, as the string has no other significant meaning beyond identifying the community described in the application.

[...]

To fulfill the requirements for Uniqueness, the string must have no other significant meaning beyond identifying the community described in the application. The string as defined in the application demonstrates uniqueness, as the string does not have any other meaning beyond identifying the community described in the application.”

A simple search on Wikipedia shows that the word “radio” extends far beyond the narrow concept as described in the application, and in particular in the description provided in the NAICS’ “radio industry” definition, as the term “radio” also covers additional uses of the “radiation of electromagnetic signals through the atmosphere or free space”, such as:

- Telephony;
- Video;
- Navigation (used in, *e.g.*, satellite navigation systems, such as GPS);
- Radar;
- Heating (used in, *e.g.*, microwaves and induction furnaces); and
- Radio control.⁵

⁴ Determination, Page 3

⁵ See <http://en.wikipedia.org/wiki/Radio> and [http://en.wikipedia.org/wiki/Radio_\(disambiguation\)](http://en.wikipedia.org/wiki/Radio_(disambiguation)).

Furthermore, Requesters point out to the fact that manufacturers of radio transmitters or receivers – both critical elements and tools in order to be able to send and receive broadcasted radio programs – have to be added to this list, and do not form part of the definition of the NAICS definition since they do not meet Criteria 2 and 3 ...

Considering the above, the Requesters would like to obtain further insights in the information reviewed and arguments developed by the Community Priority Evaluation panel in its determination that:

- a) the applied-for string *identifies* the name of the community as defined in the application, or *closely describes* such community, considering the above elements;
- b) why the other uses and meanings of the word “radio” have been disregarded by the Community Priority Evaluation panel, especially since the uses and meanings listed above are unrelated to any of the activities carried out by the EBU and the organizations supporting the Application;
- c) why the other uses and meanings of the word “radio” have been disregarded, by determining that the meaning of the word “radio” is unique (which, on the basis of the information that can be easily retrieved on a commonly known website such as Wikipedia, is obviously not the case).

III. Registration Policies – Eligibility; Name Selection; Content and Use; Enforcement

The Community Priority Evaluation panel has determined that “[...] *the application demonstrates adherence to this requirement by restricting eligibility to the community categories mentioned in Delineation, and additionally requiring the the registered domain name be “accepted as legitimate, and beneficial to the cause and value of the radio industry; and commensurate with the role and importance of the registered domain name; and in good faith at the time of registration and thereafter.”*”

Considering the fact that Requesters have requested further clarifications and information on the information and criteria used by the Community Priority Evaluation panel in § I. above, it is unclear which standards and criteria are going to be used, implemented and enforced by the EBU in view of ensuring that only members of the “radio community” or “radio industry” can register domain names.

Especially since Requesters have established that, on the basis of the criteria set out in the Application, anyone with some affinity with the concept “radio” are considered by the EBU and the Community Evaluation Panel as members of the “radio community”, Requesters would like to obtain the information and arguments used by this panel in determining that the criteria for eligibility are satisfied, even when disregarding parties who are active in other, albeit adjacent industries, such as the video, radar, navigation, and heating industry, as well as manufacturers of radio transmitters and receivers.

Furthermore, since the standard propagated by the EBU in relation to name selection is that “*the domain name must be commensurate with the role of the registered domain, and with the role and importance of the domain name based on the meaning an average user would reasonably assume in the context of the domain name*”, Requesters would like to obtain the information, arguments, and the application thereof in concrete use cases they have developed on the basis of the information contained in the Application in order to determine that the “*registration policies for name selection for registrants must be consistent with the*

articulated, community-based purpose of the applied-for gTLD", especially since Requesters do not understand what the EBU means by:

- a) "the domain name must be commensurate with the role of the registered domain";
- b) "the domain name must be commensurate with [...] the role and importance of the domain name";
- c) the criteria the "meaning" of the domain name, "average user", and such average user's "reasonable assumption",

and the standards and criteria used by ICANN and the Community Priority Evaluation panel in establishing that – on the basis of these requirements – names can be excluded from registration because they have no connection with the so-called "radio community", and how these vague requirements can possibly be enforced against the registrant.

The same question arises in relation to the standards and criteria applied by the EBU and evaluated positively by ICANN and the Community Priority Evaluation panel in terms of the "Contents and Use" criterion.

IV. In relation to the criterion "Community Endorsement":

The Community Priority Evaluation panel determined that the EBU "*was not the recognized community institution(s)/member organization(s)*", which is a view that is supported by the Requesters.

However, the Community Priority Evaluation panel has determined that the EBU "[...] *possesses documented support from institutions / organizations representing a majority of the community addressed.*"

Requesters therefore would like to obtain further information concerning the information on which such determination was based, especially in determining that the letters of support were submitted by institutions / organizations representing a *majority* of the community addressed. (emphasis added)

Furthermore, Requesters would like to obtain further information about the institutions / organizations who – in the Community Priority Evaluation panel's view also form part of the "radio community", but who have not supported the Application.

V. In relation to the criterion "Opposition":

Requesters would like to obtain further information as to the reasons why and the criteria against which the public comments, submitted by or on behalf of the Requesters to ICANN in relation to the Application, which all contained strong opposition against ICANN awarding the .RADIO gTLD to the Applicant have obviously been considered "of no relevance" or that each of the Requesters is to be considered as a "group of negligible size".

The outcome of the Community Priority Evaluation is particularly surprising, considering the fact that one of the Requesters, BRS Media Inc., is the registry for the .FM TLD, which is serving many domain name registrants relating to radio.

Standards for Disclosure

Requesters are of the opinion that none of the information requested by them meet any of the defined conditions for non-disclosure as set out in ICANN's Documentary Information Disclosure Policy:

- Information provided by or to a government or international organization, or any form of recitation of such information, in the expectation that the information will be kept confidential and/or would or likely would materially prejudice ICANN's relationship with that party.

Considering the nature and contents of Requesters' requests, this standard is not met.

- Internal information that, if disclosed, would or would be likely to compromise the integrity of ICANN's deliberative and decision-making process by inhibiting the candid exchange of ideas and communications, including internal documents, memoranda, and other similar communications to or from ICANN Directors, ICANN Directors' Advisors, ICANN staff, ICANN consultants, ICANN contractors, and ICANN agents.

Considering the nature and contents of Requesters' requests, this standard is not met. Since these requests are made in view of assessing Requesters' respective positions and (legal) actions in relation to ICANN potentially awarding the .RADIO gTLD to the EBU, and considering the impact such award may have upon Requesters, they believe that it is essential for ICANN to provide supplemental information and motivations for its determination to give the Application a passing score in the context of Community Priority Evaluation.

- Information exchanged, prepared for, or derived from the deliberative and decision-making process between ICANN, its constituents, and/or other entities with which ICANN cooperates that, if disclosed, would or would be likely to compromise the integrity of the deliberative and decision-making process between and among ICANN, its constituents, and/or other entities with which ICANN cooperates by inhibiting the candid exchange of ideas and communications.

Considering the nature and contents of Requesters' requests, this standard is not met. Since these requests are made in view of assessing Requesters' respective positions and (legal) actions in relation to ICANN potentially awarding the .RADIO gTLD to the EBU, and considering the impact such award may have upon Requesters, they believe that it is essential for ICANN to provide supplemental information and motivations for its determination to give the Application a passing score in the context of Community Priority Evaluation.

- Personnel, medical, contractual, remuneration, and similar records relating to an individual's personal information, when the disclosure of such information would or likely would constitute an invasion of personal privacy, as well as proceedings of internal appeal mechanisms and investigations.

Requesters believe that this condition does not apply in relation to this request.

- Information provided to ICANN by a party that, if disclosed, would or would be likely to materially prejudice the commercial interests, financial interests, and/or competitive position of such party or was provided to ICANN pursuant to a nondisclosure agreement or nondisclosure provision within an agreement.

Requesters believe that this condition does not apply in relation to this request.

- Confidential business information and/or internal policies and procedures.

Requesters believe that this condition does not apply in relation to this request.

- Information that, if disclosed, would or would be likely to endanger the life, health, or safety of any individual or materially prejudice the administration of justice.

Requesters believe that this condition does not apply in relation to this request.

- Information subject to the attorney– client, attorney work product privilege, or any other applicable privilege, or disclosure of which might prejudice any internal, governmental, or legal investigation.

Requesters believe that this condition does not apply in relation to this request.

- Drafts of all correspondence, reports, documents, agreements, contracts, emails, or any other forms of communication.

Requesters believe that this condition does not apply in relation to this request. The Requesters' requests relate to the information, final criteria, standards, arguments and considerations used in view of drafting a determination that lacks clarity and is insufficiently motivated.

- Information that relates in any way to the security and stability of the Internet, including the operation of the L Root or any changes, modifications, or additions to the root zone.

Requesters believe that this condition does not apply in relation to this request.

- Trade secrets and commercial and financial information not publicly disclosed by ICANN.

Requesters believe that this condition does not apply in relation to this request.

- Information requests: (i) which are not reasonable; (ii) which are excessive or overly burdensome; (iii) complying with which is not feasible; or (iv) are made with an abusive or vexatious purpose or by a vexatious or querulous individual.

As stated above, considering the impact of ICANN awarding the .RADIO gTLD may have upon Requesters, they believe that it is essential for ICANN to provide supplemental information and motivations for its determination to give the Application a passing score in the context of Community Priority Evaluation.

ICANN's transparency obligations, created by ICANN's Bylaws and Articles of Incorporation require the publication of information related to the process, facts and analysis used by

individual members of the Community Priority Evaluation panel in preparation of the Determination.

Bylaw Article III, Section 1 provides as follows:

“ICANN and its constituent bodies shall operate to the maximum extent feasible in an open and transparent manner and consistent with procedures designed to use fairness.”

Furthermore, Requesters refer to ICANN’s core mission and values, set out in their by-laws, and in particular, they intend to review the information provided and to be provided by ICANN following this request on the basis of the following values of ICANN:

7. Employing open and transparent policy development mechanisms that (i) promote well-informed decisions based on expert advice, and (ii) ensure that those entities most affected can assist in the policy development process.

8. Making decisions by applying documented policies neutrally and objectively, with integrity and fairness.

And

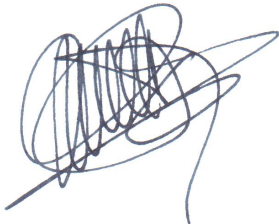
10. Remaining accountable to the Internet community through mechanisms that enhance ICANN’s effectiveness.

Furthermore, Article 4 of ICANN’s Articles of Incorporation provides:

“The Corporation shall operate for the benefit of the Internet community as a whole, carrying out its activities in conformity with relevant principles of international law and applicable international conventions and local law and, to the extent appropriate and consistent with these Articles and its Bylaws, through open and transparent processes that enable open competition and open entry in Internet-related markets. To this effect, the Corporation shall cooperate as appropriate with relevant international organizations.”

Considering the potentially irreparable harm that will be done if ICANN would not take into account the position taken by the Requesters as legitimate competitors for the .RADIO gTLD, we respectfully request ICANN to disclose the additional information, criteria, and standards set out above, which have formed the basis of the Determination.

Respectfully submitted,



Bart Lieben
Attorney-at-Law

Annex 3

Response to Documentary Information Disclosure Policy Request

To: Bart Lieben, Bart Lieben BV ovve BVBA

Date: 24 October 2014

Re: Request No. 20140926-1

Thank you for your Request for Information dated 26 September 2014 (the “Request”), which was submitted through the Internet Corporation for Assigned Names and Numbers’ (“ICANN’s”) Documentary Information Disclosure Policy (“DIDP”). For reference, a copy of your Request is attached to the email forwarding this Response.

Items Requested:

Your Request seeks the following:

- (1) the agreement(s) between ICANN and the organizations and individuals involved in the Community Priority Evaluation, in particular the representations and warranties given and quality standards to be applied by such organizations and individuals;
- (2) policies, guidelines, directives, instructions or guidance given by ICANN relating to the Community Priority Evaluation process;
- (3) internal reports, notes, meeting minutes drawn up by or on behalf of ICANN, the Community Priority Panels, and other individuals or organizations involved in the Community Priority Evaluation in relation to the Application [for .RADIO that prevailed in the CPE];
- (4) detailed information in relation to (i) the information reviewed, (ii) criteria and standards used, (iii) arguments exchanged, (iv) information disregarded or considered irrelevant, and (v) scores given by the Community Evaluation panel in view of the criteria set out in the Applicant Guidebook, and more in particular: [relating to the panel’s determination of each individual criterion].

Response

Community Priority Evaluations (“CPE”) are performed by an independent community panel that is coordinated by the Economist Intelligent Unit (“EIU”), an independent, third-party company that contracts with ICANN to perform that coordination role. The CPE standards set forth in Section 4.2 of the Applicant Guidebook (“Guidebook”) are available at <http://newgtlds.icann.org/en/applicants/agb>. The CPE Panel Process Document (at <http://newgtlds.icann.org/en/applicants/cpe>) and the CPE Guidelines (at <http://newgtlds.icann.org/en/applicants/cpe>) provide more information on the CPE process. The Guidebook, CPE Panel Process Document, and the CPE Guidelines set forth the guidelines, procedures, standards and criteria applied to CPEs, and make clear

that the EIU and its designated panelists are the only persons or entities involved in the provision of CPEs.

For item 1, there is a single contract at issue, the contract between ICANN and the EIU for the coordination of the independent community panels to perform CPEs in the New gTLD Program. ICANN does not contract with individuals to perform CPEs. The contract between ICANN and the EIU is not appropriate for public disclosure through the DIDP. The contract includes a confidentiality clause barring ICANN from disclosing the agreement as requested. The following Defined Conditions for Nondisclosure apply to the requested contract:

- Internal information that, if disclosed, would or would be likely to compromise the integrity of ICANN's deliberative and decision-making process by inhibiting the candid exchange of ideas and communications, including internal documents, memoranda, and other similar communications to or from ICANN Directors, ICANN Directors' Advisors, ICANN staff, ICANN consultants, ICANN contractors, and ICANN agents.
- Information provided to ICANN by a party that, if disclosed, would or would be likely to materially prejudice the commercial interests, financial interests, and/or competitive position of such party or was provided to ICANN pursuant to a nondisclosure agreement or nondisclosure provision within an agreement.
- Confidential business information and/or internal policies and procedures.

For item 2, seeking “policies, guidelines, directives, instructions or guidance given by ICANN relating to the CPE process,” to the extent that this is seeking information external to the types of directives that would be incorporated into a contract, much of that information is already incorporated into the publicly available documents identified above. Similarly, for items 2, 3, and 4, ICANN has previously indicated in response to Request No. 20140804-1 that ICANN has communications with persons at EIU that are not involved in the scoring of a CPE (but otherwise assist in the facilitation of a particular CPE), and identified that those communications are not appropriate for public disclosure.

Items 3 and 4 seek extensive, detailed information regarding the analysis conducted by the CPE Panel in making its determination that the .RADIO application prevailed in the CPE. The CPE Report regarding the European Broadcasting Union’s (EBU) application for the .RADIO gTLD is available at <https://www.icann.org/sites/default/files/tlds/radio/radio-cpe-1-1083-39123-en.pdf>. For instance, the Requesters seek “internal reports,” “detailed information in relation to [...] information disregarded or considered irrelevant,” and specific information “on the reasons for” the CPE Panel’s determination as to each criterion.¹

¹ ICANN is not aware of any “other individuals or organizations” outside of the EIU and the CPE Panel that were “involved in the Community Priority Evaluation” of the EBU’s .RADIO application.

To help assure independence of the process and evaluation of CPEs, ICANN (either Board or staff) is not involved with the CPE Panel's evaluation of criteria, scoring decisions, or underlying analyses. The coordination of the CPE Panel, as explained in the CPE Panel Process Document, is entirely within the work of the EIU's team. ICANN does not have, nor does it collect or maintain, the work papers of the individual CPE Panels (including the .RADIO CPE Panel) that would likely contain the information called for within these items. In accordance with the Panel Process Document, there are publicly available documents that are to be included within the CPE review, such as the comments directed to the Community Evaluation Panel on the EBU's .RADIO application by commenters including Donuts (<https://gtldcomment.icann.org/comments-feedback/applicationcomment/commentdetails/12392>), Minds + Machines (<https://gtldcomment.icann.org/comments-feedback/applicationcomment/commentdetails/12393>) and others identified at the comment collection page <https://gtldcomment.icann.org/comments-feedback/applicationcomment/viewcomments>.

As such, to the extent that ICANN has documentation responsive to Items 2, 3 and 4, such documents are either already public or subject to certain of the Defined Conditions for Nondisclosure set forth in the DIDP:

- Internal information that, if disclosed, would or would be likely to compromise the integrity of ICANN's deliberative and decision-making process by inhibiting the candid exchange of ideas and communications, including internal documents, memoranda, and other similar communications to or from ICANN Directors, ICANN Directors' Advisors, ICANN staff, ICANN consultants, ICANN contractors, and ICANN agents.
- Information exchanged, prepared for, or derived from the deliberative and decision-making process between ICANN, its constituents, and/or other entities with which ICANN cooperates that, if disclosed, would or would be likely to compromise the integrity of the deliberative and decision-making process between and among ICANN, its constituents, and/or other entities with which ICANN cooperates by inhibiting the candid exchange of ideas and communications.
- Information provided to ICANN by a party that, if disclosed, would or would be likely to materially prejudice the commercial interests, financial interests, and/or competitive position of such party or was provided to ICANN pursuant to a nondisclosure agreement or nondisclosure provision within an agreement.
- Confidential business information and/or internal policies and procedures.
- Drafts of all correspondence, reports, documents, agreements, contracts, emails, or any other forms of communication.

Although your analysis in the Request concluded that no Conditions for Nondisclosure should apply, ICANN must independently undertake the analysis of each Condition as it

applies to the documentation at issue, and make the final determination as to whether any Nondisclosure Conditions apply. Here, for example, ICANN cannot violate contractual conditions that require ICANN to maintain items as confidential solely because the Request proffers that no such conditions apply. Similarly, ICANN does not release draft documentation – particularly if draft documentation was shared for the purpose of facilitating deliberations or decision making – because drafts are not reliable sources of information regarding what actually occurred or standards that were actually applied.

For each of the items identified above as subject to Defined Conditions of Nondisclosure, ICANN has determined that there are no particular circumstances for which the public interest in disclosing the information outweighs the harm that may be caused to ICANN, its contractual relationships and its contractors’ deliberative processes by the requested disclosure.

About DIDP

ICANN’s DIDP is limited to requests for information already in existence within ICANN that is not publicly available. In addition, the DIDP sets forth Defined Conditions of Nondisclosure. To review a copy of the DIDP, please see <https://www.icann.org/resources/pages/didp-2012-02-25-en>. ICANN makes every effort to be as responsive as possible to the entirety of your Request.

We hope this information is helpful. If you have any further inquiries, please forward them to didp@icann.org.

Annex 4

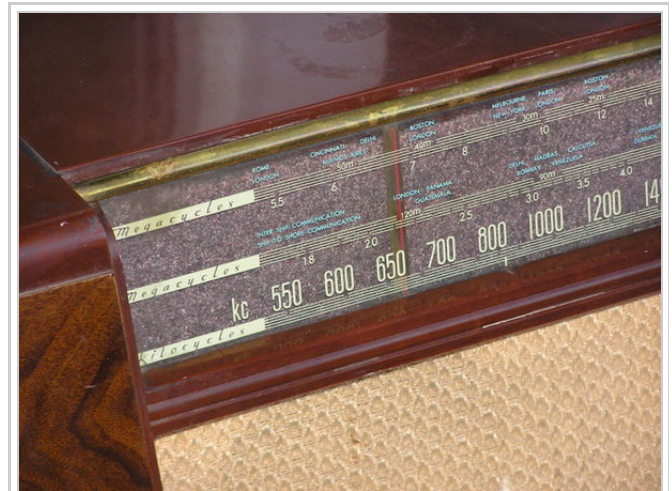
Radio

From Wikipedia, the free encyclopedia

Radio is the radiation (wireless transmission) of electromagnetic signals through the atmosphere or free space.^[n 1] Information, such as sound, is carried by systematically changing (modulating) some property of the radiated waves, such as their amplitude, frequency, phase, or pulse width. When radio waves strike an electrical conductor, the oscillating fields induce an alternating current in the conductor. The information in the waves can be extracted and transformed back into its original form.

Radio systems need a transmitter to modulate (change) some property of the energy produced to impress a signal on it. Some types of modulation include amplitude modulation and frequency modulation. Radio systems also need an antenna to convert electric currents into radio waves, and vice versa. An antenna can be used for both transmitting and receiving. The electrical resonance of tuned circuits in radios allow individual stations to be selected. The electromagnetic wave is intercepted by a tuned receiving antenna. A radio receiver receives its input from an antenna and converts it into a form usable for the consumer, such as sound, pictures, digital data, measurement values, navigational positions, etc.^[2] Radio frequencies occupy the range from a 3 kHz to 300 GHz, although commercially important uses of radio use only a small part of this spectrum.^[3]

A radio communication system sends signals by radio.^[4] The radio equipment involved in communication systems includes a transmitter and a receiver, each having an antenna and appropriate terminal equipment such as a microphone at the transmitter and a loudspeaker at the receiver in the case of a voice-communication system.^[5]



Classic radio receiver dial

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Etymology

The etymology of "radio" or "radiotelegraphy" reveals that it was called "wireless telegraphy", which was shortened to "wireless" in Britain. The prefix *radio-* in the sense of wireless transmission, was first recorded in the word *radioconductor*, a description provided by the French physicist Édouard Branly in 1897. It is based on the verb *to radiate* (in Latin "radius" means "spoke of a wheel, beam of light, ray").

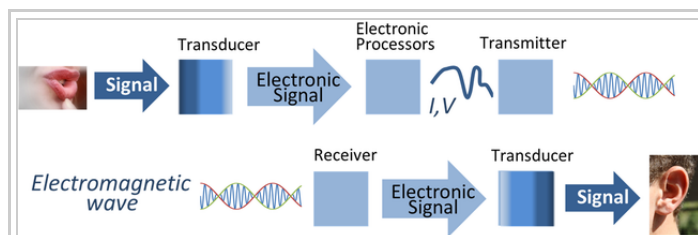
The word "radio" also appears in a 1907 article by Lee De Forest. It was adopted by the United States Navy in 1912, to distinguish radio from several other wireless communication technologies, such as the photophone. The term became common by the time of the first commercial broadcasts in the United States in

the 1920s, and was soon adopted in Europe and Asia. ("Broadcasting" is based upon an agricultural term meaning roughly "scattering seeds widely".) British Commonwealth countries continued to commonly use the term "wireless" until the mid-20th century, though the magazine of the BBC in the UK has been called *Radio Times* ever since it was first published in the early 1920s.

In recent years the more general term "wireless" has gained renewed popularity through the rapid growth of short-range computer networking, e.g., Wireless Local Area Network (WLAN), Wi-Fi, and Bluetooth, as well as mobile telephony, e.g., GSM and UMTS. Today, the term "radio" specifies the actual type of transceiver device or chip, whereas "wireless" refers to the lack of physical connections; one talks about *radio* transceivers, but another talks about *wireless* devices and *wireless* sensor networks.

Processes

Radio systems used for communication have the following elements. With more than 100 years of development, each process is implemented by a wide range of methods, specialized for different communications purposes.



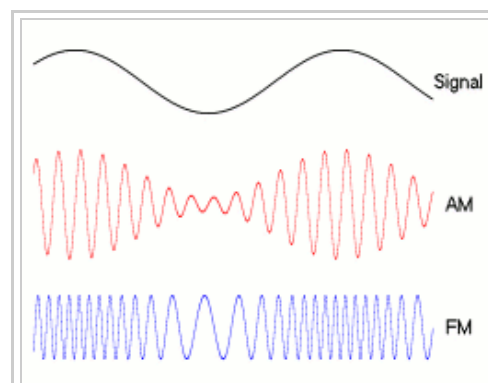
Transducing information such as sound into an electromagnetic pulse signal, which is then sent as an electromagnetic radio wave from a transmitter. A receiver intercepts the radio wave and extracts the information-bearing electronic signal, which is converted back using another transducer such as a speaker.

Transmitter and modulation

Each system contains a transmitter. This consists of a source of electrical energy, producing alternating current of a desired frequency of oscillation. The transmitter contains a system to modulate (change) some property of the energy produced to impress a signal on it. This modulation might be as simple as turning the energy on and off, or altering more subtle properties such as amplitude, frequency, phase, or combinations of these properties. The transmitter sends the modulated electrical energy to a tuned resonant antenna; this structure converts the rapidly changing alternating current into an electromagnetic wave that can move through free space (sometimes with a particular polarization).

Amplitude modulation of a carrier wave works by varying the strength of the transmitted signal in proportion to the information being sent. For example, changes in the signal strength can be used to reflect the sounds to be reproduced by a speaker, or to specify the light intensity of television pixels. It was the method used for the first audio radio transmissions, and remains in use today. "AM" is often used to refer to the medium wave broadcast band (see AM radio).

Frequency modulation varies the frequency of the carrier. The instantaneous frequency of the carrier is directly proportional to the instantaneous value of the input signal. Digital data can be sent by shifting the carrier's frequency among a set of discrete values, a technique known as frequency-shift keying.



An audio signal (top) may be carried by an AM or FM radio wave.

FM is commonly used at VHF radio frequencies for high-fidelity broadcasts of music and speech (see FM broadcasting). Normal (analog) TV sound is also broadcast using FM.

Angle modulation alters the instantaneous phase of the carrier wave to transmit a signal. It is another term for phase modulation.

Antenna

An *antenna* (or *aerial*) is an electrical device which converts electric currents into radio waves, and vice versa. It is usually used with a radio transmitter or radio receiver. In transmission, a radio transmitter supplies an electric current oscillating at radio frequency (i.e. high frequency AC) to the antenna's terminals, and the antenna radiates the energy from the current as electromagnetic waves (radio waves). In reception, an antenna intercepts some of the power of an electromagnetic wave in order to produce a tiny voltage at its terminals, that is applied to a receiver to be amplified. An antenna can be used for both transmitting and receiving.

Propagation

Once generated, electromagnetic waves travel through space either directly, or have their path altered by reflection, refraction or diffraction. The intensity of the waves diminishes due to geometric dispersion (the inverse-square law); some energy may also be absorbed by the intervening medium in some cases. Noise will generally alter the desired signal; this electromagnetic interference comes from natural sources, as well as from artificial sources such as other transmitters and accidental radiators. Noise is also produced at every step due to the inherent properties of the devices used. If the magnitude of the noise is large enough, the desired signal will no longer be discernible; this is the fundamental limit to the range of radio communications.

Resonance

Electrical resonance of tuned circuits in radios allow individual stations to be selected. A resonant circuit will respond strongly to a particular frequency, and much less so to differing frequencies. This allows the radio receiver to discriminate between multiple signals differing in frequency.

Receiver and demodulation

The electromagnetic wave is intercepted by a tuned receiving antenna; this structure captures some of the energy of the wave and returns it to the form of oscillating electrical currents. At the receiver, these currents are demodulated, which is conversion to a usable signal form by a detector sub-system. The receiver is "tuned" to respond preferentially to the desired signals, and reject undesired signals.

Early radio systems relied entirely on the energy collected by an antenna to produce signals for the operator. Radio became more useful after the invention of electronic devices such as the vacuum tube and later the transistor, which made it possible to amplify weak signals. Today radio systems are used for applications from walkie-talkie children's toys to the control of space vehicles, as well as for broadcasting, and many other applications.



Rooftop television antennas. Yagi-Uda antennas like these six are widely used at VHF and UHF frequencies.

A *radio receiver* receives its input from an antenna, uses electronic filters to separate a wanted radio signal from all other signals picked up by this antenna, amplifies it to a level suitable for further processing, and finally converts through demodulation and decoding the signal into a form usable for the consumer, such as sound, pictures, digital data, measurement values, navigational positions, etc.^[6]

Radio band

Radio frequencies occupy the range from a 3 kHz to 300 GHz, although commercially important uses of radio use only a small part of this spectrum.^[7] Other types of electromagnetic

Light comparison			
Name	Wavelength	Frequency (Hz)	Photon energy (eV)
Gamma ray	less than 0.01 nm	more than 10 EHz	100 keV - 300+ GeV
X-Ray	0.01 to 10 nm	30 PHz - 30 EHz	120 eV to 120 keV
Ultraviolet	10 nm - 400 nm	30 EHz - 790 THz	3 eV to 124 eV
Visible	390 nm - 750 nm	790 THz - 405 THz	1.7 eV - 3.3 eV
Infrared	750 nm - 1 mm	405 THz - 300 GHz	1.24 meV - 1.7 eV
Microwave	1 mm - 33 centimeters	300 GHz - 1000 MHz	1.24 meV - 3.3 μ eV
Radio	1 mm - km	300 GHz - 3 kHz	1.24 meV - 12.4 feV

radiation, with frequencies above the RF range, are infrared, visible light, ultraviolet, X-rays and gamma rays. Since the energy of an individual photon of radio frequency is too low to remove an electron from an atom, radio waves are classified as non-ionizing radiation.

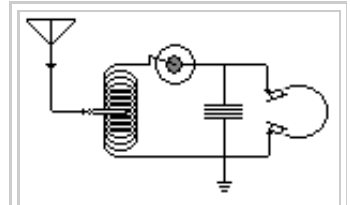
Communication systems

A *radio communication system* sends signals by radio.^[8] Types of radio communication systems deployed depend on technology, standards, regulations, radio spectrum allocation, user requirements, service positioning, and investment.^[9]

The radio equipment involved in communication systems includes a transmitter and a receiver, each having an antenna and appropriate terminal equipment such as a microphone at the transmitter and a loudspeaker at the receiver in the case of a voice-communication system.^[10]

The power consumed in a transmitting station varies depending on the distance of communication and the transmission conditions. The power received at the receiving station is usually only a tiny fraction of the transmitter's output, since communication depends on receiving the information, not the energy, that was transmitted.

Classical radio communications systems use frequency-division multiplexing (FDM) as a strategy to split up and share the available radio-frequency bandwidth for use by different parties communications concurrently. Modern radio communication systems include those that divide up a radio-frequency band by time-division multiplexing (TDM) and code-division multiplexing (CDM) as alternatives to the classical FDM strategy. These systems offer different tradeoffs in supporting multiple users, beyond the FDM strategy that was ideal for broadcast radio but less so for applications such as mobile telephony.



A crystal receiver, consisting of an antenna, adjustable electromagnetic coil, crystal rectifier, capacitor, headphones and ground connection.

A radio communication system may send information only one way. For example, in broadcasting a single transmitter sends signals to many receivers. Two stations may take turns sending and receiving, using a single radio frequency; this is called "simplex." By using two radio frequencies, two stations may continuously and concurrently send and receive signals - this is called "duplex" operation.

History

19th century

The meaning and usage of the word "radio" has developed in parallel with developments within the field of communications and can be seen to have three distinct phases: electromagnetic waves and experimentation; wireless communication and technical development; and radio broadcasting and commercialization. James Clerk Maxwell predicted the propagation of electromagnetic waves (radio waves) (1873) and Heinrich Rudolf Hertz made the first demonstration of transmission of radio waves through free space (1887) but many individuals—inventors, engineers, developers and businessmen constructed systems based on their own understanding of these and other phenomenon, some predating Maxwell and Hertz' discoveries. Thus "wireless telegraphy" and radio wave based systems can be attributed to multiple "inventors". Development from a laboratory demonstration to a commercial entity spanned several decades and required the efforts of many practitioners.

In 1878, David E. Hughes noticed that sparks could be heard in a telephone receiver when experimenting with his carbon microphone. He developed this carbon-based detector further and eventually could detect signals over a few hundred yards. He demonstrated his discovery to the Royal Society in 1880, but was told it was merely induction, and therefore abandoned further research.

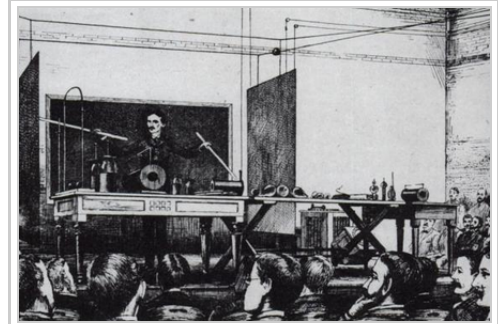
Experiments were undertaken by Thomas Edison and his employees of Menlo Park. Edison applied in 1885 to the U.S. Patent Office for a patent on an electrostatic coupling system between elevated terminals. The patent was granted as U.S. Patent 465,971 (<https://www.google.com/patents/US465971>) on December 29, 1891. The Marconi Company would later purchase rights to the Edison patent to protect them legally from lawsuits.^[11]

In 1884 Temistocle Calzecchi-Onesti at Fermo in Italy experiments with tubes containing powder and nickel silver with traces of mercury metal filings and their reactions when conducting electricity. This would lead to the development of the iron filings filled coherer, a radio detecting device usually credited to Edouard Branly in 1890.

Hertzian waves

Between 1886 and 1888 Heinrich Rudolf Hertz publishes the results of his experiments where he was able to transmit electromagnetic waves (radio waves) through the air proving Maxwell's electromagnetic theory.^{[12][13]} Early on after their discovery radio waves were referred to as "Hertzian waves".^[14] Between 1890 and 1892 physicists such as John Perry, Frederick Thomas Trouton and William Crookes proposed electromagnetic or Hertzian waves as a navigation aid or means of communication with Crookes writing on the possibilities of wireless telegraphy based on Hertzian waves in 1892.^[15]

After learning of Hertz demonstrations of wireless transmission, inventor Nikola Tesla began developing his own system based on Hertz and Maxwell's ideas, primarily as a means of wireless lighting and power distribution.^{[16][17]} Tesla, concluding that Hertz had not demonstrated airborne electromagnetic waves (radio transmission), went on to develop a system based on what he thought was the primary conductor, the earth.^[18] In 1893 demonstrations of his ideas, in St. Louis, Missouri and at the *Franklin Institute* in Philadelphia, Tesla proposed this wireless power technology could also incorporate a system for the telecommunication of information.



Tesla in his "Experiments with alternate currents of very high frequency and their application to methods of artificial illumination" lecture of 1891. After continued research, Tesla presented his ideas on wireless communication in 1892 and expanded on them in 1893.

In a lecture on the work of Hertz, shortly after his death, Professor Oliver Lodge and Alexander Muirhead demonstrated wireless signaling using Hertzian (radio) waves in the lecture theater of the Oxford University Museum of Natural History on August 14, 1894. During the demonstration a radio signal was sent from the neighboring Clarendon laboratory building, and received by apparatus in the lecture theater.

Building on the work of Lodge,^[19] the Indian Bengali physicist Jagadish Chandra Bose ignited gunpowder and rang a bell at a distance using millimeter range wavelength microwaves in a November 1894 public demonstration at Town Hall of Kolkata,. Bose wrote in a Bengali essay, *Adrisya Alok* (Invisible Light), "The invisible light can easily pass through brick walls, buildings etc. Therefore, messages can be transmitted by means of it without the mediation of wires." Bose's first scientific paper, "On polarisation of electric rays by double-refracting crystals" was communicated to the Asiatic Society of Bengal in May 1895. His second paper was communicated to the Royal Society of London by Lord Rayleigh in October 1895. In December 1895, the London journal the *Electrician* (Vol. 36) published Bose's paper, "On a new electro-polariscope". At that time, the word 'coherer', coined by Lodge, was used in the English-speaking world for Hertzian wave receivers or detectors. The *Electrician* readily commented on Bose's coherer. (December 1895). The *Englishman* (18 January 1896) quoted from the *Electrician* and commented as follows:"Should Professor Bose succeed in perfecting and patenting his 'Coherer', we may in time see the whole system of coast lighting throughout the navigable world revolutionised by an Indian Bengali scientist working single handed in our Presidency College Laboratory." Bose planned to "perfect his coherer" but never thought of patenting it.

In 1895, conducting experiments along the lines of Hertz's research, Alexander Stepanovich Popov built his first radio receiver, which contained a coherer. Further refined as a lightning detector, it was presented to the Russian Physical and Chemical Society on May 7, 1895. A depiction of Popov's lightning detector was printed in the *Journal of the Russian Physical and Chemical Society* the same year. Until recently, mistakenly believed that it was the first description (publication of the minutes 15/201 of this session — December issue of the journal *RPCS*^[20]), but in fact the first description of the device was given by Dmitry Aleksandrovich Lachinov in July 1895 in the 2nd edition of his course "Fundamentals of Meteorology and climatology" — the first in Russia.^{[21][22]} Popov's receiver was created on the improved basis of Lodge's receiver, and originally intended for reproduction of its experiments.

Marconi

In 1894 the young Italian inventor Guglielmo Marconi began working on the idea of building a commercial wireless telegraphy system based on the use of Hertzian waves (radio waves), a line of inquiry that he noted other inventors did not seem to be pursuing.^[23] Marconi read through the literature and used the ideas of others who were experimenting with radio waves but did a great deal to develop devices such as portable transmitters and receiver systems that could work over long distances,^[24] turning what was essentially a laboratory experiment into useful communication system.^[25] By August 1895 Marconi was field testing his system but even with improvements he was only able to transmit signals up to 1/2 mile, a distance Oliver Lodge had predicted in 1894 as the maximum transmission distance for radio waves. Marconi raised the height of his antenna and hit upon the idea of grounding his transmitter and receiver. With these improvements the system was capable of transmitting signals up to 2 miles (3.2 km) and over hills^[26] Marconi's experimental apparatus proved to be the first engineering complete, commercially successful radio transmission system.^{[27][28][29]} Marconi's apparatus is also credited for saving the 700 people that survived the tragic Titanic disaster.^[30]



British Post Office engineers inspect Guglielmo Marconi's wireless telegraphy (radio) equipment in 1897.

In 1896, Marconi was awarded British patent 12039, *Improvements in transmitting electrical impulses and signals and in apparatus there-for*, the first patent ever issued for a Hertzian wave (radio wave) base wireless telegraphic system.^[31] In 1897, he established a radio station on the Isle of Wight, England. Marconi opened his "wireless" factory in the former silk-works at Hall Street, Chelmsford, England in 1898, employing around 60 people. Shortly after the 1900s, Marconi held the patent rights for radio. Marconi would go on to win the Nobel Prize in Physics in 1909^[32] and be more successful than any other inventor in his ability to *commercialize* radio and its associated equipment into a global business.^[24] In the US some of his subsequent patented refinements (but not his original radio patent) would be overturned in a 1935 court case (upheld by the US Supreme Court in 1943).^[33]

20th century

In 1900, Brazilian priest Roberto Landell de Moura transmitted the human voice wirelessly. According the newspaper *Jornal do Comercio* (June 10, 1900), he conducted his first public experiment on June 3, 1900, in front of journalists and the General Consul of Great Britain, C.P. Lupton, in São Paulo, Brazil, for a distance of approximately 5.0 miles (8 km). The points of transmission and reception were Alto de Santana and Paulista Avenue.^[34]

One year after that experiment, he received his first patent from the Brazilian government. It was described as "equipment for the purpose of phonetic transmissions through space, land and water elements at a distance with or without the use of wires." Four months later, knowing that his invention had real value, he left Brazil for the United States with the intent of patenting the machine at the US Patent Office in Washington, DC.

Having few resources, he had to rely on friends to push his project. In spite of great difficulty, three patents were awarded: "The Wave Transmitter" (October 11, 1904) which is the precursor of today's radio transceiver; "The Wireless Telephone" and the "Wireless Telegraph", both dated November 22, 1904.

The next advancement was the vacuum tube detector, invented by Westinghouse engineers. On Christmas Eve 1906, Reginald Fessenden used a synchronous rotary-spark transmitter for the first radio program broadcast, from Ocean Bluff-Brant Rock, Massachusetts. Ships at sea heard a broadcast that included Fessenden playing *O Holy Night* on the violin and reading a passage from the Bible.^[35]

In June 1912 Marconi opened the world's first purpose-built radio factory at New Street Works in Chelmsford, England.

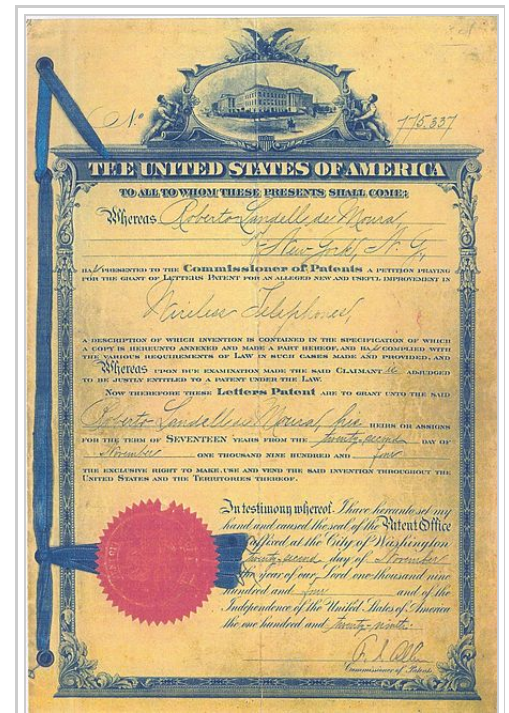
This was, for all intents and purposes, the first transmission of what is now known as amplitude modulation or AM radio. The first radio news program was broadcast August 31, 1920 by station 8MK in Detroit, Michigan, which survives today as all-news format station WWJ under ownership of the CBS network. The first college radio station began broadcasting on October 14, 1920 from Union College, Schenectady, New York under the personal call letters of Wendell King, an African-American student at the school.^[35]

That month 2ADD (renamed WRUC in 1947), aired what is believed to be the first public entertainment broadcast in the United States, a series of Thursday night concerts initially heard within a 100-mile (160 km) radius and later for a 1,000-mile (1,600 km) radius. In November 1920, it aired the first broadcast of a sporting event.^{[35][36]} At 9 pm on August 27, 1920, Sociedad Radio Argentina aired a live performance of Richard Wagner's opera *Parsifal* from the Coliseo Theater in downtown Buenos Aires. Only about twenty homes in the city had receivers to tune in this radio program. Meanwhile, regular entertainment broadcasts commenced in 1922 from the Marconi Research Centre at Writtle, England.

Sports broadcasting began at this time as well, including the college football on radio broadcast of a 1921 West Virginia vs. Pittsburgh football game.^[37]

One of the first developments in the early 20th century was that aircraft used commercial AM radio stations for navigation. This continued until the early 1960s when VOR systems became widespread.^[38] In the early 1930s, single sideband and frequency modulation were invented by amateur radio operators. By the end of the decade, they were established commercial modes. Radio was used to transmit pictures visible as television as early as the 1920s. Commercial television transmissions started in North America and Europe in the 1940s.

In 1947 AT&T commercialized the Mobile Telephone Service. From its start in St. Louis in 1946, AT&T then introduced Mobile Telephone Service to one hundred towns and highway corridors by 1948. Mobile Telephone Service was a rarity with only 5,000 customers placing about 30 000 calls each week. Because only three radio channels were available, only three customers in any given city could make mobile telephone calls at one time.^[39] Mobile Telephone Service was expensive, costing 15 USD per month, plus 0.30 to 0.40 USD per local call, equivalent to about 176 USD per month and 3.50 to 4.75 per call in 2012 USD.^[40] The Advanced Mobile Phone System analog mobile cell phone system, developed by Bell Labs,



"The Wireless Telephone" U S Patent Office in Washington, DC

was introduced in the Americas in 1978,^{[41][42][43]} gave much more capacity. It was the primary analog mobile phone system in North America (and other locales) through the 1980s and into the 2000s.

In 1954, the Regency company introduced a pocket transistor radio, the TR-1, powered by a "standard 22.5 V Battery." In 1955, the newly formed Sony company introduced its first transistorized radio.^[44] It was small enough to fit in a vest pocket, powered by a small battery. It was durable, because it had no vacuum tubes to burn out. Over the next 20 years, transistors replaced tubes almost completely except for high-power transmitters.

By 1963, color television was being broadcast commercially (though not all broadcasts or programs were in color), and the first (radio) communication satellite, *Telstar*, was launched. In the late 1960s, the U.S. long-distance telephone network began to convert to a digital network, employing digital radios for many of its links. In the 1970s, LORAN became the premier radio navigation system.

Soon, the U.S. Navy experimented with satellite navigation, culminating in the launch of the Global Positioning System (GPS) constellation in 1987. In the early 1990s, amateur radio experimenters began to use personal computers with audio cards to process radio signals. In 1994, the U.S. Army and DARPA launched an aggressive, successful project to construct a software-defined radio that can be programmed to be virtually any radio by changing its software program. Digital transmissions began to be applied to broadcasting in the late 1990s.

Uses of radio

Early uses were maritime, for sending telegraphic messages using Morse code between ships and land. The earliest users included the Japanese Navy scouting the Russian fleet during the Battle of Tsushima in 1905. One of the most memorable uses of marine telegraphy was during the sinking of the RMS *Titanic* in 1912, including communications between operators on the sinking ship and nearby vessels, and communications to shore stations listing the survivors.

Radio was used to pass on orders and communications between armies and navies on both sides in World War I; Germany used radio communications for diplomatic messages once it discovered that its submarine cables had been tapped by the British. The United States passed on President Woodrow Wilson's Fourteen Points to Germany via radio during the war. Broadcasting began from San Jose, California in 1909,^[45] and became feasible in the 1920s, with the widespread introduction of radio receivers, particularly in Europe and the United States. Besides broadcasting, point-to-point broadcasting, including telephone messages and relays of radio programs, became widespread in the 1920s and 1930s. Another use of radio in the pre-war years was the development of detection and locating of aircraft and ships by the use of radar (*R*adio *D*etection *A*nd *R*anging).



An American girl listens to a radio during the Great Depression.



The Regency TR-1 which used Texas Instruments' NPN transistors was the world's first commercially produced transistor radio.

Today, radio takes many forms, including wireless networks and mobile communications of all types, as well as radio broadcasting. Before the advent of television, commercial radio broadcasts included not only news and music, but dramas, comedies, variety shows, and many other forms of entertainment (the era from the late 1920s to the mid-1950s is commonly called radio's "Golden Age"). Radio was unique among methods of dramatic presentation in that it used only sound. For more, see radio programming.

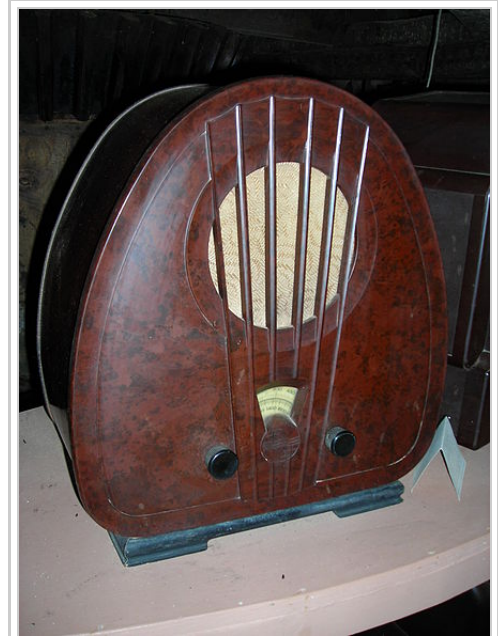
Audio

AM radio uses amplitude modulation, in which the amplitude of the transmitted signal is made proportional to the sound amplitude captured (transduced) by the microphone, while the transmitted frequency remains unchanged. Transmissions are affected by static and interference because lightning and other sources of radio emissions on the same frequency add their amplitudes to the original transmitted amplitude.

In the early part of the 20th century, American AM radio stations broadcast with powers as high as 500 kW, and some could be heard worldwide; these stations' transmitters were commandeered for military use by the US Government during World War II. Currently, the maximum broadcast power for a civilian AM radio station in the United States and Canada is 50 kW, and the majority of stations that emit signals this powerful were grandfathered in (see List of 50 kW AM radio stations in the United States). In 1986 KTNN received the last granted 50,000 watt license. These 50 kW stations are generally called "clear channel" stations (not to be confused with Clear Channel Communications), because within North America each of these stations has exclusive use of its broadcast frequency throughout part or all of the broadcast day.

FM broadcast radio sends music and voice with less noise than AM radio. It is often mistakenly thought that FM is higher fidelity than AM, but that is not true. AM is capable of the same audio bandwidth that FM employs. AM receivers typically use narrower filters in the receiver to recover the signal with less noise. AM stereo receivers can reproduce the same audio bandwidth that FM does due to the wider filter used in an AM stereo receiver, but today, AM radios limit the audio bandpass to 3–5 kHz. In frequency modulation, amplitude variation at the microphone causes the transmitter frequency to fluctuate. Because the audio signal modulates the frequency and not the amplitude, an FM signal is not subject to static and interference in the same way as AM signals. Due to its need for a wider bandwidth, FM is transmitted in the Very High Frequency (VHF, 30 MHz to 300 MHz) radio spectrum.

VHF radio waves act more like light, traveling in straight lines; hence the reception range is generally limited to about 50–200 miles (80–322 km). During unusual upper atmospheric conditions, FM signals are occasionally reflected back towards the Earth by the ionosphere, resulting in long distance FM reception.



Bakelite radio at the Bakelite Museum, Orchard Mill, Williton, Somerset, UK.



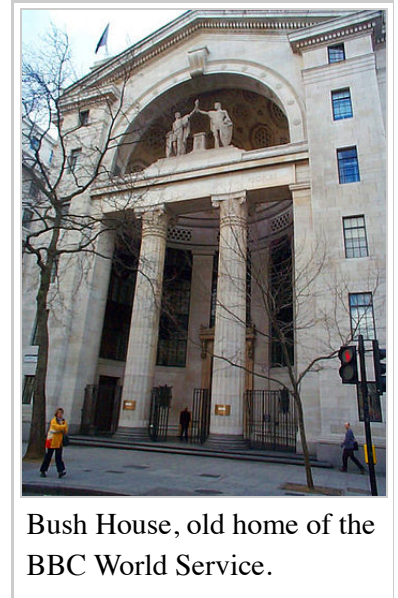
A Fisher 500 AM/FM hi-fi receiver from 1959.

FM receivers are subject to the capture effect, which causes the radio to only receive the strongest signal when multiple signals appear on the same frequency. FM receivers are relatively immune to lightning and spark interference.

High power is useful in penetrating buildings, diffracting around hills, and refracting in the dense atmosphere near the horizon for some distance beyond the horizon. Consequently, 100,000 watt FM stations can regularly be heard up to 100 miles (160 km) away, and farther, 150 miles (240 km), if there are no competing signals.

A few old, "grandfathered" stations do not conform to these power rules. WBCT-FM (93.7) in Grand Rapids, Michigan, US, runs 320,000 watts ERP, and can increase to 500,000 watts ERP by the terms of its original license. Such a huge power level does not usually help to increase range as much as one might expect, because VHF frequencies travel in nearly straight lines over the horizon and off into space. Nevertheless, when there were fewer FM stations competing, this station could be heard near Bloomington, Illinois, US, almost 300 miles (480 km) away.

FM subcarrier services are secondary signals transmitted in a "piggyback" fashion along with the main program. Special receivers are required to utilize these services. Analog channels may contain alternative programming, such as reading services for the blind, background music or stereo sound signals. In some extremely crowded metropolitan areas, the sub-channel program might be an alternate foreign-language radio program for various ethnic groups. Sub-carriers can also transmit digital data, such as station identification, the current song's name, web addresses, or stock quotes. In some countries, FM radios automatically re-tune themselves to the same channel in a different district by using sub-bands.



Bush House, old home of the BBC World Service.

Aviation voice radios use VHF AM. AM is used so that multiple stations on the same channel can be received. (Use of FM would result in stronger stations blocking out reception of weaker stations due to FM's capture effect). Aircraft fly high enough that their transmitters can be received hundreds of miles away, even though they are using VHF.

Marine voice radios can use single sideband voice (SSB) in the shortwave High Frequency (HF—3 MHz to 30 MHz) radio spectrum for very long ranges or narrowband FM in the VHF spectrum for much shorter ranges. Narrowband FM sacrifices fidelity to make more channels available within the radio spectrum, by using a smaller range of radio frequencies, usually with five kHz of deviation, versus the 75 kHz used by commercial FM broadcasts, and 25 kHz used for TV sound.

Government, police, fire and commercial voice services also use narrowband FM on special frequencies. Early police radios used AM receivers to receive one-way dispatches.

Civil and military HF (high frequency) voice services use shortwave radio to contact ships at sea, aircraft and isolated settlements. Most use single sideband voice (SSB), which uses less bandwidth than AM.^[46] On an AM radio SSB sounds like ducks quacking, or the adults in a



Degen DE1103, an advanced world mini-receiver with single sideband modulation and dual conversion

Charlie Brown cartoon. Viewed as a graph of frequency versus power, an AM signal shows power where the frequencies of the voice add and subtract with the main radio frequency. SSB cuts the bandwidth in half by suppressing the carrier and one of the sidebands. This also makes the transmitter about three times more powerful, because it doesn't need to transmit the unused carrier and sideband.

TETRA, Terrestrial Trunked Radio is a digital cell phone system for military, police and ambulances. Commercial services such as XM, WorldSpace and Sirius offer encrypted digital satellite radio.

Telephony

Mobile phones transmit to a local cell site (transmitter/receiver) that ultimately connects to the public switched telephone network (PSTN) through an optic fiber or microwave radio and other network elements. When the mobile phone nears the edge of the cell site's radio coverage area, the central computer switches the phone to a new cell. Cell phones originally used FM, but now most use various digital modulation schemes. Recent developments in Sweden (such as DROPme) allow for the instant downloading of digital material from a radio broadcast (such as a song) to a mobile phone.

Satellite phones use satellites rather than cell towers to communicate.

Video

Analog television sends the picture as AM and the sound as AM or FM, with the sound carrier a fixed frequency (4.5 MHz in the NTSC system) away from the video carrier. Analog television also uses a vestigial sideband on the video carrier to reduce the bandwidth required.

Digital television uses 8VSB modulation in North America (under the ATSC digital television standard), and COFDM modulation elsewhere in the world (using the DVB-T standard). A Reed–Solomon error correction code adds redundant correction codes and allows reliable reception during moderate data loss. Although many current and future codecs can be sent in the MPEG transport stream container format, as of 2006 most systems use a standard-definition format almost identical to DVD: MPEG-2 video in Anamorphic widescreen and MPEG layer 2 (*MP2*) audio. High-definition television is possible simply by using a higher-resolution picture, but H.264/AVC is being considered as a replacement video codec in some regions for its improved compression. With the compression and improved modulation involved, a single "channel" can contain a high-definition program and several standard-definition programs.

Navigation

All satellite navigation systems use satellites with precision clocks. The satellite transmits its position, and the time of the transmission. The receiver listens to four satellites, and can figure its position as being on a line that is tangent to a spherical shell around each satellite, determined by the time-of-flight of the radio signals from the satellite. A computer in the receiver does the math.

Radio direction-finding is the oldest form of radio navigation. Before 1960 navigators used movable loop antennas to locate commercial AM stations near cities. In some cases they used marine radiolocation beacons, which share a range of frequencies just above AM radio with amateur radio operators. LORAN systems also used time-of-flight radio signals, but from radio stations on the ground.

Very High Frequency Omnidirectional Range (VOR), systems (used by aircraft), have an antenna array that transmits two signals simultaneously. A directional signal rotates like a lighthouse at a fixed rate. When the directional signal is facing north, an omnidirectional signal pulses. By measuring the difference in phase of these two signals, an aircraft can determine its bearing or radial from the station, thus establishing a line of position. An aircraft can get readings from two VORs and locate its position at the intersection of the two radials, known as a "fix."

When the VOR station is collocated with DME (Distance Measuring Equipment), the aircraft can determine its bearing and range from the station, thus providing a fix from only one ground station. Such stations are called VOR/DMEs. The military operates a similar system of nav aids, called TACANs, which are often built into VOR stations. Such stations are called VORTACs. Because TACANs include distance measuring equipment, VOR/DME and VORTAC stations are identical in navigation potential to civil aircraft.

Radar

Radar (Radio Detection And Ranging) detects objects at a distance by bouncing radio waves off them. The delay caused by the echo measures the distance. The direction of the beam determines the direction of the reflection. The polarization and frequency of the return can sense the type of surface. Navigational radars scan a wide area two to four times per minute. They use very short waves that reflect from earth and stone. They are common on commercial ships and long-distance commercial aircraft.

General purpose radars generally use navigational radar frequencies, but modulate and polarize the pulse so the receiver can determine the type of surface of the reflector. The best general-purpose radars distinguish the rain of heavy storms, as well as land and vehicles. Some can superimpose sonar data and map data from GPS position.

Search radars scan a wide area with pulses of short radio waves. They usually scan the area two to four times a minute. Sometimes search radars use the Doppler effect to separate moving vehicles from clutter. Targeting radars use the same principle as search radar but scan a much smaller area far more often, usually several times a second or more. Weather radars resemble search radars, but use radio waves with circular polarization and a wavelength to reflect from water droplets. Some weather radar use the Doppler effect to measure wind speeds.

Data (digital radio)

Most new radio systems are digital, including Digital TV, satellite radio, and Digital Audio Broadcasting. The oldest form of digital broadcast was spark gap telegraphy, used by pioneers such as Marconi. By pressing the key, the operator could send messages in Morse code by energizing a rotating commutating spark gap. The rotating commutator produced a tone in the receiver, where a simple spark gap would produce a hiss, indistinguishable from static. Spark-gap transmitters are now illegal, because their transmissions span several hundred megahertz. This is very wasteful of both radio frequencies and power.



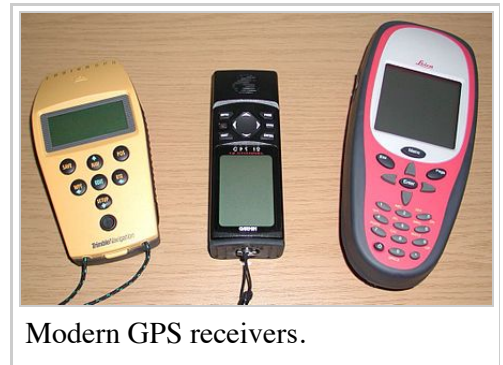
2008 Pure One Classic digital radio

The next advance was continuous wave telegraphy, or CW (Continuous Wave), in which a pure radio frequency, produced by a vacuum tube electronic oscillator was switched on and off by a key. A receiver with a local oscillator would "heterodyne" with the pure radio frequency, creating a whistle-like audio tone. CW uses less than 100 Hz of bandwidth. CW is still used, these days primarily by amateur radio operators (hams). Strictly, on-off keying of a carrier should be known as "Interrupted Continuous Wave" or ICW or on-off keying (OOK).

Radioteletype equipment usually operates on short-wave (HF) and is much loved by the military because they create written information without a skilled operator. They send a bit as one of two tones using frequency-shift keying. Groups of five or seven bits become a character printed by a teleprinter. From about 1925 to 1975, radioteletype was how most commercial messages were sent to less developed countries. These are still used by the military and weather services.

Aircraft use a 1200 Baud radioteletype service over VHF to send their ID, altitude and position, and get gate and connecting-flight data. Microwave dishes on satellites, telephone exchanges and TV stations usually use quadrature amplitude modulation (QAM). QAM sends data by changing both the phase and the amplitude of the radio signal. Engineers like QAM because it packs the most bits into a radio signal when given an exclusive (non-shared) fixed narrowband frequency range. Usually the bits are sent in "frames" that repeat. A special bit pattern is used to locate the beginning of a frame.

Communication systems that limit themselves to a fixed narrowband frequency range are vulnerable to jamming. A variety of jamming-resistant spread spectrum techniques were initially developed for military use, most famously for Global Positioning System satellite transmissions. Commercial use of spread spectrum began in the 1980s. Bluetooth, most cell phones, and the 802.11b version of Wi-Fi each use various forms of spread spectrum.



Modern GPS receivers.

Systems that need reliability, or that share their frequency with other services, may use "coded orthogonal frequency-division multiplexing" or COFDM. COFDM breaks a digital signal into as many as several hundred slower subchannels. The digital signal is often sent as QAM on the subchannels. Modern COFDM systems use a small computer to make and decode the signal with digital signal processing, which is more flexible and far less expensive than older systems that implemented separate electronic channels.

COFDM resists fading and ghosting because the narrow-channel QAM signals can be sent slowly. An adaptive system, or one that sends error-correction codes can also resist interference, because most interference can affect only a few of the QAM channels. COFDM is used for Wi-Fi, some cell phones, Digital Radio Mondiale, Eureka 147, and many other local area network, digital TV and radio standards.

Heating

Radio-frequency energy generated for heating of objects is generally not intended to radiate outside of the generating equipment, to prevent interference with other radio signals. Microwave ovens use intense radio waves to heat food. Diathermy equipment is used in surgery for sealing of blood vessels. Induction furnaces are used for melting metal for casting, and induction hobs for cooking.

Amateur radio service

Amateur radio, also known as "ham radio", is a hobby in which enthusiasts are licensed to communicate on a number of bands in the radio frequency spectrum non-commercially and for their own enjoyment. They may also provide emergency and public service assistance. This has been very beneficial in emergencies, saving lives in many instances.^[47]

Radio amateurs use a variety of modes, including nostalgic ones like Morse code and experimental ones like Low-Frequency Experimental Radio. Several forms of radio were pioneered by radio amateurs and later became commercially important, including FM, single-sideband (SSB), AM, digital packet radio and satellite repeaters. Some amateur frequencies may be disrupted illegally by power-line internet service.



Amateur radio station with multiple receivers and transceivers

Unlicensed radio services

Unlicensed, government-authorized personal radio services such as Citizens' band radio in Australia, most of the Americas, and Europe, and Family Radio Service and Multi-Use Radio Service in North America exist to provide simple, usually short range communication for individuals and small groups, without the overhead of licensing. Similar services exist in other parts of the world. These radio services involve the use of handheld units.

Wi-Fi also operates in unlicensed radio bands and is very widely used to network computers.

Free radio stations, sometimes called pirate radio or "clandestine" stations, are unauthorized, unlicensed, illegal broadcasting stations. These are often low power transmitters operated on sporadic schedules by hobbyists, community activists, or political and cultural dissidents. Some pirate stations operating offshore in parts of Europe and the United Kingdom more closely resembled legal stations, maintaining regular schedules, using high power, and selling commercial advertising time.^[48]^[49]

Radio control (RC)

Radio remote controls use radio waves to transmit control data to a remote object as in some early forms of guided missile, some early TV remotes and a range of model boats, cars and airplanes. Large industrial remote-controlled equipment such as cranes and switching locomotives now usually use digital radio techniques to ensure safety and reliability.

In Madison Square Garden, at the Electrical Exhibition of 1898, Nikola Tesla successfully demonstrated a radio-controlled boat.^[50] He was awarded U.S. patent No. 613,809 for a "Method of and Apparatus for Controlling Mechanism of Moving Vessels or Vehicles."^[51]

See also

Applications

- Marine and mobile radio telephony
- Radio astronomy
- Radio broadcasting
 - AM broadcasting
 - Campus radio
 - Radio documentary
- Direction finding
- Wireless energy transfer

Radio science

- Carrier current
- Types of radio emissions
 - Longwave/Medium wave/Shortwave

Radio technologies

- Batteryless radio
- Digital radio
- Radio software
- Superheterodyne receiver
- Tuner (radio)

Alternatives

- Cable FM
- Free-space optical communication (FSO)
- Internet radio

Other

- Antique radio
- Bandstacked
- Years in radio
- Timeline of radio

Notes

- ^[1] A While the term 'radio' is actually the combining form of radiant (radioactive, radiotherapy), the process that was

1. While the term radio- is actually the combining form of radiant (radioactive, radiometry), the process that was originally called radiotelegraphy has become so common that it is nearly always called just 'radio' and the associated electromagnetic waves are called *radio waves*. In practice, the frequency of radio signals are significantly below that of visible light (in the radio frequency range) from about 3 kHz to 300 GHz.^[1]

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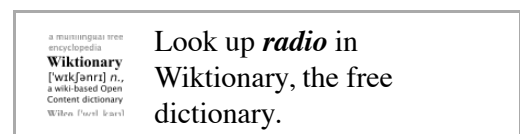
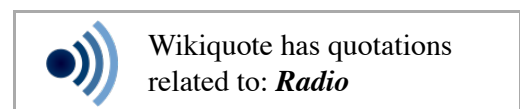
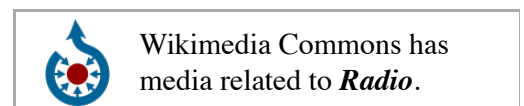
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Radio (disambiguation)

From Wikipedia, the free encyclopedia

Radio is a medium of wireless communication. **Radio** may also refer to:

a munging tree
encyclopedia
Wiktionary
[ˈwɪkɪˈɒnəri] n.,
a wiki-based Open
Content dictionary
Wikipedia's sister project

Look up *radio* or *radio-* in Wiktionary, the free dictionary.

Science and technology

- Radio waves, the medium of radio communication
- Shortwave radio, using high frequency radio waves
- Receiver (radio), for receiving radio signals
- Radio astronomy, the study of celestial objects at radio frequencies
- Radio transmitter, for sending radio signals
- Two-way radio, for both sending and receiving radio signals, including:
 - Amateur radio, also called "ham radio"
 - Citizen's band radio, often shortened to "CB radio"
 - Walkie-talkie, a transceiver designed to be portable

Contents

- 1 Science and technology
- 2 Radio broadcasting culture
- 3 Arts and entertainment
 - 3.1 Music
 - 3.1.1 Albums
 - 3.1.2 Songs
 - 3.2 Films and plays
- 4 See also

Radio broadcasting culture

- Radio broadcasting, a service to transmit audio content via radio waves
- Radio program, the content of radio broadcasting
- Radio programming, organizing radio programs in a daily, weekly, or season-long schedule
- Radio format, the theme or genre of programming from a radio broadcaster
- Radio drama, audio storytelling broadcast on the radio
- *Radio* (magazine), a radio broadcasting trade publication first published in 1994 under the title *BE Radio*

Arts and entertainment

Music

Albums

- *Radio* (Ky-Mani Marley album)
- *Radio* (LL Cool J album)

- *Radio* (Michael Rother album)
- *Radio* (Naked City album)
- *Radio* (Wise Guys album), or its title track
- *Radio* (X-Dream album), or its title track

Songs

- "Radio" (Alesha Dixon song)
- "Radio" (Beyoncé Knowles song)
- "Radio" (Cir.Cuz song)
- "Radio" (Client song)
- "Radio" (The Corrs song)
- "Radio" (Danny Saucedo song)
- "Radio" (Darius Rucker song)
- "Radio" (Lana Del Rey song)
- "Radio" (Laura White song)
- "Radio" (Musiq Soulchild song)
- "Radio" (Robbie Williams song)
- "Radio Song", by R.E.M.
- "Radio", a song by Alkaline Trio, from their albums *Maybe I'll Catch Fire* and *Damnesia*
- "Radio", a song by Big & Rich from their album *Between Raising Hell and Amazing Grace*
- "Radio", a song by Chuck Brodsky, featured in the 2003 film *Radio*
- "Radio", a song by Jamiroquai
- "Radio", a song by Kiss
- "Radio", a song by Shakin' Stevens
- "Radio", a song by Rancid, from their album *Let's Go*, covered by NOFX
- "Radio", a song by Smash Mouth, from their album *Astro Lounge*
- "Radio", a song by Teenage Fanclub, from their album *Thirteen*
- "Radio", a song by Watt White, from the album *WWE The Music: A New Day*, used as the entrance music for WWE superstar Zack Ryder
- "Radio Song", by Jet from the album *Get Born*
- "Radio Song", by Superbus

Films and plays

- *Radio* (2003 film), an American film starring Ed Harris and Cuba Gooding, Jr
- *Radio* (2009 film), a Hindi-language Indian film

- *Radio* (2013 film), a Malayalam-language Indian film
- *Radio* (play) (2006), written by UK playwright Al Smith

See also

- Radio (game), a children's playground game
- On the Radio (disambiguation)
- All pages beginning with "Radio"

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Categories: Disambiguation pages

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Oxford English Dictionary | The definitive record of the English language

radio, *n.*

Pronunciation: Brit. /'reɪdɪəʊ/, U.S. /'reɪdiəʊ/

Etymology: < *radio-* (in RADIO-TELEGRAM *n.*, RADIO-TELEGRAPH *n.*, RADIO-TELEGRAPHY *n.*); compare RADIO- *comb. form*³.

Originally only in attributive use. In some (especially early) compounds it is unclear whether the first element is to be interpreted as RADIO *n.* or RADIO- *comb. form*³; *radio-receiver* in quot. 1903 at sense 1a probably shows RADIO- *comb. form*³ as first element and is not necessarily to be taken as early evidence of the noun.

orig. *U.S.*

1.

a. The transmission and reception of radio-frequency electromagnetic waves, esp. waves carrying sound signals; *spec.* the use of this process as a means of communication that does not need a connecting wire; wireless telephony or telegraphy.

- [1903 C. H. SEWALL *Wireless Telegr.* IV. 154 The first radio-receiver in which cause and effect were observed and recognized was devised by Hertz in 1886.]
- 1907 L. DE FOREST in *Electr. World* 22 June 1270/1 This factor, damping, is of far more vital import than any regulation of wave-lengths... Radio chaos will certainly be the result until..regulation is enforced.
- 1912 *Statutes U.S.A.* XXXVII. I. 308 'Radio communication' as used in this Act means any system of electrical communication by telegraphy or telephony without the aid of any wire [etc.].
- 1914 *Chicago Defender* 21 Nov. 3 (*heading*) Radio controls boat's course.
- 1917 *Electr. Experimenter* Jan. 650 (*heading*) Election returns flashed by radio to 7,000 amateurs.
- 1919 *Pop. Sci. Monthly* Mar. 116/3 The bearings are determined from known wireless stations by means of radio.
- 1924 *Glasgow Herald* 26 Jan. 11/5 At the time when radio is in its infancy, experimentalists midway in the United States summoned their friends to hear the Atlantic waves and Pacific surf simultaneously.
- 1948 A. L. ALBERT *Radio Fund.* x. 380 In radio, the feed-back coil of an oscillator is sometimes called a tickler.
- 1964 R. H. BAKER *Astron.* (ed. 8) xvii. 505 (*heading*) Tracing of spiral arms by radio.
- 1994 *Canad. Geographic* Jan. 4/2, I..still enjoy radio for a hobby, talking to other hams all over the world.
- 2004 W. B. McCLOSKEY *Raiders* IV. XXV. 358 It had been difficult to reach anyone by radio since the closed-in mountains blocked clear reception.

b. Organized wireless broadcasting in sound; the sound broadcasting

network or service as a whole; sound broadcasting as a medium of communication or as a form of art or entertainment.

- 1920 *Sci. Amer.* 24 July 79/1 A leading radio company is about to begin construction of a super-powered radio station.
- 1922 *Sci. Amer.* June 376/2 Radio today is a continuous performance. You purchase your ticket in the form of a receiving set..and then listen in..to the music of today..the news of the minute, stock quotations, and so on.
- 1936 J. GRENFELL *Let.* Jan. in *Darling Ma* (1989) 10 What we heard on the radio was really the announcement of his death.
- 1944 W. C. GREET *World Words* p.v, For effective radio..pronunciation is not an opportunity to be elegant but an everyday problem of what to do with..words.
- 1958 *Listener* 25 Sept. 482/1 [The play] was also made into some very good radio by the adaptation of the prologue spoken by Luxury and her daughter Poverty.
- 1960 C. BUKOWSKI *Let.* 21 Dec. in C. Bukowski & S. Martinelli *Beerspit Night & Cursing* (2001) 127 Card from Linick telling me some of my stuff will be read on radio.
- 1978 *Times* 12 June 3/2 Mainly because of economies, radio had become very run down... Some equipment had not been replaced, studios were becoming less suitable.
- 1981 J. MONACO *How to read Film* (rev. ed.) v. 374 In helping to create new needs,..in inculcating shared values, and in defining the general shape of culture, television and radio have no equals.
- 1996 *Church Times* 8 Nov. 17/4 There are some memorable episodes which, even without the hoax element, make *The War of the Worlds* a superb piece of radio.

c. In form **Radio**. Forming the first part of the proper name of a particular radio station or service, the second part frequently being a place name.

Radio 1, 2, 3, 4, 5, (also **Radio One**, etc.): the five national radio networks of the BBC, the first four inaugurated on 30 Sept. 1967 in place of the programme services that had existed previously, and Radio 5 being added on 27 Aug. 1990.

- 1920 *Wireless World* Jan. 587/2 A new Dutch wireless company, called the Nederlandsche Telegraaf Maat[s]chappij 'Radio-Holland' has been formed... 'Radio-Holland' acquires the rights of wireless installations on Dutch mercantile vessels..and the contracts relating thereto.
- 1925 *Glasgow Herald* 10 Nov. 8 Glasgow can be as effectively 'heterodyned' by a German station as Radio Paris can be by a Spanish one working on an almost identical wave-length.
- 1958 *Economist* 25 Oct. 331/1 Radio Free Europe..concentrates on Poland, Czechoslovakia, Hungary, Rumania and Bulgaria, while Radio Liberation broadcasts to the Soviet Union, in no less than seventeen languages.
- 1967 *Listener* 17 Aug. 194/1 The new 247 metres network will be known as Radio 1. The 1500 metres and VHF network will be Radio 2, and..the present Third Network will become Radio 3 and the Home-Service network Radio 4.
- 1968 *B.B.C. Handbk.* 29 Our first local station, Radio Leicester, began broadcasting on 8 November 1967, followed shortly afterwards by Radio Sheffield and Radio Merseyside.
- 1973 P. DICKINSON *Gift* ix. 139 Penny was listening to Radio One.

- 1998 P. GOUREVITCH *We wish to inform You* ix. 121 Thomas wasn't surprised to learn that he was on an assassin's list. At Radio Rwanda, he had refused to speak the language of Hutu Power and had led two strikes.
- 2005 *Guardian* 29 Jan. (Review section) 14/1 Michelangelo's Snowman? It could be the title of one of those cute and anecdotal history books, often serialised on Radio 4.

d. Also **Radio**. With preceding proper name, freq. of a place: a particular (specified) radio station or network.

- [1922 *Fort Wayne (Indiana) Jrnl.-Gaz.* 22 Jan. 3/1 From the Westinghouse Radio studio the first program to be sent broadcast by the station KYW, located at Chicago, is given out.]
- 1935 *Hammond (Indiana) Times* 25 Nov. 1/5 (*heading*) E. W. Anderson on Chicago radio.
- 1958 *Whitaker's Almanack* 582/1 Moscow radio announced that Russia had launched an earth satellite.
- 1962 *Variety* 5 Sept. 21/4 CBS Radio's proposed cutback in entertainment shows..is expected to be acted on.
- 1970 G. SCOTT-HERON *Vulture* 90 Across the street under the low-rise apartment buildings, the young whites were drinking beer and macking while they listened to WABC radio.
- 1984 *Summary of World Broadcasts Pt. 4: Middle East, Afr. & Lat. Amer.* (B.B.C.) (Nexis) 19 Mar. ME/7595/i An Iranian military communiqué broadcast by Tehran radio..said Islamic combatants continued to consolidate captured positions in the Kheybar operational sector.
- 1994 *Campaign* 8 Apr. 25/2 But the player they all watch is Capital Radio, the second commercial radio station to come on air in the UK.

2. Radio equipment; *spec.* an apparatus for receiving radio signals, a radio receiving set; (also) one for both receiving and transmitting radio signals. Cf. WIRELESS *n.* 3.

- [1909 *Radio-telegraphic Installations & Radio-telegraphers on Certain Ocean Steamers* (Hearing before U.S. House Comm. Merchant Marine & Fisheries) 2 What do you mean by the term 'radio'? [Apparently referring to the *radio-* in *radio-telegraphic*.] It is a technical term now generally used and applied to these instruments.]
- 1912 *Oakland (Calif.) Tribune* 18 May 5/4 Failure to get his discharge from the navy..caused Charles P. Bush, 33 years old, a radio operator, to commit suicide.
- 1917 *Electr. Experimenter* May 3/1 When the German spies..found that it was not very healthy to operate their outfits in attics or in house chimneys..they simply put their radios in touring cars, cleverly concealing the aerial wires inside of the car bodies.
- 1923 *Davenport (Iowa) Democrat & Leader* 25 Mar. 2/1 Listening in on the radio now is all the rage in France.
- 1925 H. L. FOSTER *Trop. Tramp with Tourists* 97 It fairly shrieked with the blare of jazz—of jazz from radios, jazz from mechanical pianos.
- 1936 KING EDWARD VIII in *Manch. Guardian Weekly* 6 Mar. 185/1 Science has made it possible for me..to speak to you all over the radio.

- 1941 W. H. AUDEN *New Year Let.* ii. 36 He moves on tiptoe round the room, Turns on the radio to mark Isolde's Sehnsucht for the dark.
- 1968 *New Society* 22 Aug. 265/2 Non-U *radio*/U *wireless* is no longer true; the U call it a radio too.
- 1973 J. PATTINSON *Search Warrant* ii. 28 There was a load of noise... It sounded like a radio going full belt on a pop-music channel.
- 1989 A. AIRD *1990 Good Pub Guide* 661 This friendly old waterside place..has a ship-to-shore radio as well as a wind speed indicator in the bar.
- 2006 P. RUSESABAGINA & T. ZOELLNER *Ordinary Man* viii. 168 There was a radio on the outside ledge and I would listen to the news.

3. A message sent by wireless telegraphy or telephony; a radio-telegram. Now *rare* or *disused*.

- [1906 *Internat. Radiotelegraphic Convention: Regulations* (Internat. Radiotelegr. Conf., Berlin) 34 Radiotelegrams bear the service instruction 'Radio' in the preamble.]
- 1915 R. H. DAVIS *With Allies* i. 2 She sent no wireless messages. But she could receive them... For any exhibition they gave of excitement or concern, the news the radio brought them might have been the result of a by-election.
- 1920 *Glasgow Herald* 10 Aug. 7 In reply the Polish Government sent the following radio.
- 1924 R. KEABLE *Recompence* (1926) i. 18 There's a radio in. The *Balmoral* sailed a fortnight after we did.
- 1925 J. DOS PASSOS *Manhattan Transfer* III. v. 372 I'll go and send Blackhead a radio.

4. *Astron.* The part of the electromagnetic spectrum comprising radio-frequency wavelengths. Esp. in *in the radio*.

- 1968 *Physical Rev. Lett.* **21** 1540/1 NGC1275 and 3C120..are a hundred times more luminous in the radio than most of the Seyferts.
- 1975 *Nature* 3 Jan. 7/1 It [*sc.* the Crab nebula] is unique in that it has been detected over the entire electromagnetic spectrum from radio through infra~red and the visual to X rays and γ rays.
- 1995 R. C. SMITH *Observational Astrophysics* iv. 122 The other main constituent of the interstellar medium, molecular gas, also radiates primarily in the radio, especially in the millimetre range.

COMPOUNDS

C1.

a. General *attrib.*

radio aerial *n.*

- 1915 *Lima (Ohio) Daily News* 14 Aug. 6/4 Have located radio aerial in the woods along shore.
- 1995 R. C. SMITH *Observational Astrophysics* iv. 103 Because radio aerials are directional, the effective

area of an antenna varies with the direction of the source relative to the axis of the antenna.

radio antenna *n.*

- 1915 *Janesville (Wisconsin) Daily Gaz.* 20 Feb. 1/6 The program called for President Wilson to send an electric spark through the air from Washington to be received on the radio-antennae switch on the exposition's tower of jewels.
- 1927 B. F. DASHIELL *Pop. Guide to Radio* v. 71 (*heading*) The use of radio antennas and grounds.
- 2006 *Marketing* (Nexis) 28 June 12 The cards, which contain a computer chip and a tiny radio antenna..do not require a PIN to be keyed in or a signature.

radio apparatus *n.*

- 1909 *Fort Wayne (Indiana) Sentinel* 15 May 15/3 The Radio apparatus..has found profitable employment in..transmitting communications overland, from point to point, regardless of distance or direction.
- 1998 *Independent* (Nexis) 31 May 57 Trials of distance in transmission proved hopelessly subjective, since any radio apparatus has to compete with rival transmissions from taxi firms, police cars and indeed other baby monitors in the neighbourhood.

radio beam *n.*

- 1922 *Lowell (Mass.) Sun* 5 July 3/1 Even in the heaviest fogs, steel vessels many miles away may be located and their course determined by the radio beams reflected from them.
- 1994 C. PURSELL *White Heat* vi. 153 The microwaves of radar were joined by the radio beams from proximity fuses.

radio bearing *n.*

- 1924 *Proc. National Acad. Sci. USA* 10 213 The radio bearing is taken with the search coil in the same manner as with the large rotatable loop in the other type of radio compass.
- 2006 *Derby Evening Tel.* (Nexis) 30 Jan. 4 Navigation by night was proving extremely difficult, even for an airship standing still in the sky trying to get a fix on its position either visually or by a radio bearing from Germany.

radio blackout *n.*

- 1935 *Winnipeg Free Press* 26 Oct. 2/3 Joan Blaine, doing a series of radio black-outs for the Chicago traffic court's drive against reckless driving, is renewing old Broadway acquaintances.
- 2001 S. F. ODENWALD *23rd Cycle: Learning to live with Stormy Star* I. iii. 32 The Monday storm cut off the United States from radio contact with the rest of the world, following an afternoon of 'jumpy

connections' that ended with a complete radio blackout.

radio cabinet *n.*

- [1918 *Lake County (Hammond, Indiana) Times* 22 Feb. 3/1 (*adv.*) Electric radio cabinet.]
 1925 *Scribner's Mag.* Sept. 19/1 Have you seen a radio cabinet which..actually does not look like one?
 2000 A. MASSEY *Hollywood beyond Screen* ii. 134 No prototypes existed for radio cabinets, so designers either tried to borrow styles from the past to encase the machinery or, more commonly, adopted the *moderne* as the acceptable symbol of new technology.

radio communication *n.*

- 1909 *Nebraska State Jrnl.* 24 Feb. 5/4 The startling disaster of the collision of the Republic and Florida has aroused..countries..to the necessity of having some efficient form of radio-communication on most vessels carrying passengers.
 1995 *New Scientist* 1 May 20/3 If all goes well it will be the most advanced satellite for radio communications in orbit.

radio countermeasure *n.*

- 1945 *Times* 23 June 5/4 The radio counter-measures which would be used in defence must necessarily become more and more effective as the missiles approached the country at which they were aimed.
 1993 W. B. BREUER *Hoodwinking Hitler* xxi. 173 He had been given the green light to try to develop a radio countermeasure (RCM) to neutralize the Knickebein.

radio detector *n.*

- 1922 *Monessen (Pa.) Daily Independent* 27 Mar. 3/5 Several children pried a lock on a window at the home of Mr. and Mrs. Sam Blythe and entered the home and stole a radio detector.
 1996 *Astroparticle Physics* 5 43 (*title*) Comparison of optical, radio, and acoustical detectors for ultrahigh-energy neutrinos.

radio equipment *n.*

- 1913 *Janesville (Wisconsin) Daily Gaz.* 12 Nov. 1/6 Another important recommendation to be made by the United States delegation refers to the subject of radio equipments.
 1925 *Woman's World* Apr. 59/3 (*adv.*) Cleanest, most highly-refined oil for sewing machines, phonographs, radio equipment, bicycles, guns, etc.
 2000 R. BARGER et al. *Hell's Angel* i. 3 We keep going and they keep coming around with all their surveillance methods and radio equipment watching us and keeping tabs.

radio fix *n.*

1937 *Hammond (Indiana) Times* 21 Oct. 1/2 Why, if he were having trouble maintaining his course, didn't he determine his true position by taking a radio 'fix'.

1989 *Jrnl. Zool.* **219** 197 Peak activity patterns, i.e. movement < 200 m between radio-fixes, occurred in June–July 1986 and January 1987.

radio intercept *n.*

1927 *Syracuse (N.Y.) Herald* 17 May 10/1 The radio intercept office had been busy snatching from the air messages suspected of being transmitted between vessels of the hostile fleet.

1974 G. MARKSTEIN *Cooler* liv. 192 It was a radio intercept by security monitoring. The message, decoded, read: 'Stand by 24-hourly.'

2002 *India Weekly* 2 Aug. 30/1 Radio intercepts also indicated that some 500 Al Qaida and Taliban fighters were holed up in the northern areas of Pakistan-administered Kashmir after fleeing from Afghanistan.

radio interference *n.*

1914 *Wireless World* July 246/1 Electricity in our language..is not 'juice'; neither is radio interference 'jamming'.

1992 *Videomaker* Feb. 22/3 Wired microphones..provide cleaner sound quality than most wireless mikes and aren't susceptible to radio interference.

radio link *n.*

1913 *Fitchburg (Mass.) Daily Sentinel* 4 Apr. 8/5 The length of the radio link between Panama and San Francisco will also be a deterrent in securing reliable continuity of radio transmission between those points at all seasons of the year.

1998 T. CLANCY *Rainbow Six* vii. 154 A wireless earpiece gave him the radio link to the rest of the team, along with a microphone chip inside his collar.

radio marker *n.*

1926 *Helena (Montana) Independent* 30 Nov. 4/7 The radio beacons, the radio markers, the radio telephones for direct communication with the pilot in flight to apprise him of conditions ahead along the route.

1983 *Proc. Internat. Carnahan Conf. Security Technol.* 233 The mechanism of electromagnetic wave propagation in snow was found to be effective for snow rescue operation using a radio marker.

radio mast *n.*

- 1914 *Oakland (Calif.) Tribune* 15 Oct. 8/6 The new radio mast has been erected at Sitka..by the Mare Island crew on board the cruiser Buffalo.
- 1991 *Computing* 10 Jan. 76/1 BT..has decided it simply must have a dirty great 100ft radio mast, replete with large dish aerials, on top of Trundle Hill.

radio message *n.*

- 1909 *Fort Wayne (Indiana) Jrnl. Gaz.* 21 Mar. 18/3 It is noiseless, and can be operated at a much lower voltage than the present system. The cost, too, of the Radio messages is greatly reduced.
- 1998 M. BOOTH *Industry of Souls* vi. 134 At last..Nedelko received a radio message that the winter was on its way back with a vengeance, driving the high pressure back south.

radio modem *n.*

- 1983 *Mini-Micro Syst.* July 244/2 Users requiring only point-to-point data communications can use a simpler radio-based technology: the radio modem.
- 1996 *Lat. Amer. Perspectives* 23 49 The recent development of radio modems powered by solar-cell batteries will allow villages without electricity or phone lines access to the Internet.
- 2006 *West Austral.* (Nexis) 21 Apr. 37 The..system links hand-held pads with inbuilt radio modems, purpose-written software and a base station, all of which link in to accounting and stock systems.

radio monitoring *n.*

- 1930 *Oakland (Calif.) Tribune* 29 Jan. 10/7 He will welcome donation of a site..for a radio monitoring station.
- 2000 *Spectrum* Spring 8/4 Through a system of data registration, information sharing, CCTV and radio monitoring, each local scheme will liaise to provide a coherent database of regional criminal activities.

radio officer *n.*

- 1912 *Oakland (Calif.) Tribune* (Electronic text) 11 July, Mare Island's radio officer.
- 1991 S. WINCHESTER *Pacific* (1992) 142 'Port Hedland Radio, am I having your good permission to come in alongside Berth Alpha?' the radio officer called in impeccable Chowringhee English.

radio operator *n.*

- 1912 *N.Y. Times* 20 Apr. 8/5 With reference to the reflections made by the radio-operator of the

Titanic..it would seem to me that this is simply another attempt to..shift the blame.

- 1996 P. GODWIN *Mukiwa* (1997) xvi. 298, I called for the radio operator and asked for a helicopter casevac from Gwanda. But it was already dark, and the dispatcher sounded unenthusiastic.

radio receiver *n.*

1903 Radio receiver [see sense 1a].

- 1916 *Washington Post* 27 Nov. 9/8 Proposals will be received at the Bureau of Supplies and Accounts, Navy Department..for delivering..radio receivers, [etc.].

2002 P. MILES *Robot Sumo* viii. 156 All R/C systems use an industry-standard, three-wire connection cable to transmit control information from the radio receiver to the various remotely controlled devices.

radio reception *n.*

1922 C. W. TAUSSIG (*title*) The book of radio: a complete, simple explanation of radio reception and transmission.

1943 O. LUHR *Physics tells Why* (1944) vii. 145 At night and in winter the [ionized atmospheric] layers change their character; and this alteration generally results in improvement of radio reception.

2001 A. FELDMAN *One Step Ahead* ii. 40 Radio reception, as usual, faded amidst a cacophony of whistles and squeals.

radio relay *n.*

[1915 *Reno (Nevada) Evening Gaz.* 18 Jan. 1/1 Another link in the stations of the Amateur Radio Relay Association.]

1926 *Wireless World* 1 Sept. 307/1 The wireless signals received in this Radio Relay Office are relayed to the Central Radio Office in the same building.

1966 *McGraw-Hill Encycl. Sci. & Technol.* (rev. ed.) V. 520/2 Radio relays are used for simultaneous transmission of up to hundreds of telephone conversations over a trunk route.

1995 L. GARRETT *Coming Plague* i. 21 Johnson and Kuns contacted Panama through a cumbersome radio relay system.

radio room *n.*

1912 *Washington Post* 30 July 12/3 The radio bill..requires that there shall be a connection between the radio room and the bridge of vessels.

1999 J. ELLIOT *Unexpected Light* (2000) xii. 450, I would make a regular detour via the offices of the Red Cross, to check the message box down by the radio room in case of news from home.

radio set *n.*

- 1912 *Oakland (Calif.) Tribune* 26 June 9/3 New radio sets are being installed aboard the two vessels.
- 1998 *N.Y. Rev. Bks.* 26 Mar. 13/2, I bought her four books of comics, a box of candy,..a portable radio set, chewing gum, [etc.].

radio shop *n.*

- 1917 *Washington Post* 4 Jan. 8/4 (*table*) Navy Yard Duckpin League... Radio shop.
- 1974 E. JONES *Barlow comes to Judgement* 127 He works in a radio shop in Bayswater.
- 2001 *Times* 22 Oct. 9/3 People communicate with relatives in Taleban-held areas via Radio Shops, where they can talk about anything but the war over an open radio line.

radio tower *n.*

- 1912 *N.Y. Times* 21 May 23/2 First Lieut. D. Olmstead, Signal Corps, to Pittsburgh for temporary duty pertaining to inspection of a radio tower.
- 2000 N. DEMILLE *Lion's Game* xv. 120 Their run-in altitude remained at three hundred feet, and they'd been told there were no radio towers or skyscrapers that high to worry about.

radio tracking *n.*

- 1931 *Proc. IRE* 19 1534 The complications introduced into the transmitter led to the decision to limit the problem for the time to radio tracking.
- 1992 S. P. MARAN *Astron. & Astrophysics Encycl.* 421/2 Radio tracking of the spacecraft yielded a precise radius for the planet that showed Mercury to be a more perfect sphere than either the Earth or Mars. A search for mercurian moons proved futile.

radio traffic *n.*

- 1913 *Amer. Jrnl. Internat. Law* 7 256 In waters where the radio traffic is very great (British Channel, etc.), a coastal station should not..be called by a shipboard station.
- 1991 *Britain's Gulf War* 48/1 The allies manufactured a great charade—using..troop deployments and bogus radio traffic to suggest that the main allied thrust was going to be across the Saudi/Kuwait border.

radio transmission *n.*

- 1910 *N.Y. Times* 1 May Mag. section 5/6 With the new methods of radio transmission, the location of the operator could be absolutely concealed.
- 1996 M. D. RUSSELL *Sparrow* iv. 28 Whenever the telescope wasn't being used for something serious, Jimmy ran the standard SETI routines, monitoring the skies for alien radio transmissions.

radio transmitter *n.*

- 1911 *Times* 28 Dec. 8/4 The extra pressure obtained by this amplification enables much greater currents to be employed to control the radio-transmitter.
- 2001 J. HAMILTON-PATERSON *Loving Monsters* (2002) xi. 215 It was widely believed that Faroukh..had a secret radio transmitter in one of his palaces and was in constant touch with the Italian High Command in Rome.

radio valve *n.*

- 1922 *Times* 19 July 5/3 Marconi's Wireless Telegraph Co., Ltd. v. Mullard Radio Valve Co., Ltd.
- 1929 *Radio Times* 8 Nov. 434/2 (*advt.*) The Radio Valves—with the only filament that has stood the test of time.
- 1992 *IEE Rev.* **38** 107 Three decades ago, the development of the transistor threatened to relegate radio valves to the museums.

b. Connected with, participating in, or transmitted as part of organized sound broadcasting.

radio acting *n.*

- 1925 *Oakland (Calif.) Tribune* 20 Sept. m6/2 Etta Wilson Coleman, director of Thespian company..has completed arrangements for what is declared to be the first road tour ever undertaken by a radio acting company.
- 1940 *Radio Times* 23 Aug. 6/4 Frederick Allen..had also done a considerable amount of radio acting and singing before becoming a BBC announcer.
- 1991 A. RENDLE *So you want to be Actor?* (ed. 2) 65 Radio acting makes specific technical demands on an actor.

radio actor *n.*

- 1924 *Oakland (Calif.) Tribune* 23 Nov. m9/1 The radio actor is placed in the same position as the screen actor by being denied the inspiration of an audience.
- 1998 *Los Angeles Times* (Nexis) 25 Mar. F7, The radio actors are gearing up for the Poe broadcast.

radio actress *n.*

- 1925 *Olean (N.Y.) Herald* 25 Aug. 2/5 (*headline*) New kind of 'stage-door Johnnies' pester beautiful radio actress.
- 2005 *San Diego Union-Tribune* (Nexis) 5 Oct. E2 Using a script, three radio actresses in three different cities spoke as Betty Crocker, authority on baking and cooking.

radio adaptation *n.*

- 1926 *Syracuse (N.Y.) Herald* 3 Oct. III. 5/1 A radio adaptation of Edna Ferber's new novel, 'Show Boat', will be presented in the Eveready Hour Tuesday night.
- 2004 *Church Times* 8 Oct. 14/1 It cleverly left us with the same sense of the unexplained as the book—a feat that many screen and radio adaptations fail to achieve.

radio announcer *n.*

- 1922 *Davenport (Iowa) Democrat & Leader* 17 Dec. 27/4 Among the pleasures our grandfathers never knew is hearing a radio announcer say 'this is station buzz-buzz-buzz at Skennekkteddy—New Yawk—.'
- 2001 J. WATERMAN *Arctic Crossing* III. 229 Over another coffee 'mugup', I meet a garrulous and pock-faced Canadian Broadcasting Corporation radio announcer.

radio audience *n.*

- 1922 *Oneonta (N.Y.) Daily Star* 13 Mar. 4/1 He addressed not only a congregation that packed the church but also a radio audience scattered from coast to coast and numbering probably upwards of 200,000 persons.
- 1999 S. RUSHDIE *Ground beneath her Feet* (2000) vi. 185 Colchis struck gold by playing 'race music', rhythm and blues, to white radio audiences.

radio ballad *n.*

- 1922 *Bridgeport (Connecticut) Telegram* 7 Apr. 10/4 (*heading*) *A Radio Ballad* By Berton Braley. Sadie O'Grady and Timothy Brady Sure were an up-to-date pair.
- 1960 *Times* 16 Aug. 5/2 Singing the Fishing; radio ballad by Ewan MacColl and Charles Parker.
- 2000 *Daily News (Los Angeles)* (Nexis) 8 June (L.A. Life section), Matchbox's strength is in radio ballads, sweetly tuneful classic-rock sing-alongs like the current Top 20 hit 'Bent'.

radio broadcast *n.*

- 1922 *Newark (Ohio) Advocate* 17 Feb. 12/2 (*headline*) Y.M.C.A. arranges radio broadcast. Wireless operators will be interested to hear of the address and special music that will be sent from the radio chapel of Westinghouse.
- 1995 N. NEGROPONTE *Being Digital* (1996) xii. 153 Imagine a future in which your interface agent can read every newswire and newspaper and catch every TV and radio broadcast on the planet, and then construct a personalized summary.

radio broadcasting *n.*

- 1922 *Indiana (Pa.) Evening Gaz.* 17 Jan. 1/4 This evening Howard E. Reed of the Union Trust Company will speak on Budget Making over the Westinghouse Radio Broadcasting Service.
- 1975 *Listener* 25 Dec. 853/3 The poem, with its five voices, is suited to radio broadcasting.
- 2001 *Kindred Spirit* Summer 34/3 She was then offered a part-time job in radio broadcasting which..offered Linda a valuable underpinning to keep herself steady and solvent.

radio bulletin *n.*

- 1919 *Oakland (Calif.) Tribune* 18 May 2/5 Captains Crenshaw and Ghent on board the Prairie, picked up radio bulletins from the destroyers along the flight course announcing the progress of the planes.
- 1988 S. SHEPHERD *Black Justice* (BNC) 122 The first news of Burrows' escape released to the general public was a radio bulletin at ten o'clock that night.

radio celebrity *n.*

- 1923 *Atlanta (Georgia) Constit.* 3 June A13/8 An array of radio celebrities whose names are by-words with thousands of radio fans in America.
- 1994 *Sci. Amer.* June 72/3 (caption) Bree Walker Lampley, a television and radio celebrity in Los Angeles, has..a deformity of the hands and feet.

radio comedian *n.*

- 1925 *Davenport (Iowa) Democrat & Leader* 6 Feb. 4/5 Paul Earle the well known radio comedian proved as popular as usual.
- 1980 S. BRETT *Dead Side of Mike* vi. 60 The programme was merely a showcase for the talents of a once-loved radio comedian.

radio comedy *n.*

- 1922 *Oakland (Calif.) Tribune* 26 Nov. B8/8 Both she and her sister will do song and dance numbers. A one-act radio comedy also is on the bill of fun.
- 2000 A. CALCUTT *Brit Cult* 210/1 Until then radio comedy had always included 'boom-boom gags, silly voices and a musical interlude'.

radio commentator *n.*

- 1930 *Vidette-Messenger* (Valparaiso, Indiana) 23 July 1/6 Every law enforcement agency in Michigan was concentrated in Detroit today in an effort to solve the murder of Gerald W. Buckley, attorney

and radio commentator on civic affairs.

1994 I. BOTHAM *My Autobiogr.* vi. 110 When Jackman first arrived, a Guyanan radio commentator said that his inclusion in our side was in breach of the Gleneagles Agreement.

radio commercial *n.*

1931 *Port Arthur (Texas) News* 2 Dec. 4/7 He consumed his 15 minutes by mentioning (7 times) the radio commercial for whom he works once a week.

1990 R. BAKER *Country in my Cellar* v. ix. 179 In this radio commercial..two termites are overheard discussing the dumbness of the man whose floor they are eating.

radio company *n.*

1908 *Cedar Rapids (Iowa) Evening Gaz.* 5 Mar. 12/3 The funds expended by the officials for stock in the Radio company of New York were illegal.

2005 *Wall St. Jrnl.* (Central ed.) 7 Dec. B10/1 Radio companies have long heralded digital radio as a technology that will bring buzz back to radio.

radio corporation *n.*

1919 *Times* 25 Oct. 19/1 A new radio corporation has been organized in America.

1990 J. HANSON & U. NARULA *New Communication Technol. in Developing Countries* iv. 50 By 1936 a radio corporation was set up along the model of the BBC and was given the name of All India Radio.

radio critic *n.*

1922 *Indianapolis (Indiana) Star* 23 May 1/4 (*headline*) Keith's orchestra elicits plaudits of radio critics.

1997 *Scotsman* (Nexis) 9 Aug. 21 I'll be happy not to broadcast again, and I am..now a radio critic facing the task of tackling that same morning lump of airtime I used to inhabit.

radio criticism *n.*

1925 *Bridgeport (Connecticut) Telegram* 12 Feb. 2/7 The bill, Warner maintained, in common with many other radio criticisms and critics assumes that amateur broadcasters and wireless operators are the principal cause of radio interference.

1940 R. S. LAMBERT *Ariel & all his Quality* vii. 173 It seemed desirable for the BBC to try and build up a..solid school of radio criticism.

2003 *National Post (Toronto)* 20 May s3/5 Hasek became so distressed over some radio criticism on another occasion, he phoned a local sports talk show flamethrower to give his side of an injury

story.

radio drama *n.*

- 1922 *News-Sentinel* (Fort Wayne, Indiana) 2 Sept. 5/6 To the man who can attend a theatrical production at any time the radio drama may lose something, the story may need the eye to give it full force.
- 1997 *Guardian* 14 June (Week section) 7/2 [He] used..music that was rippling and subtle rather than booming and indexical (as in so much radio drama).

radio dramatist *n.*

- 1926 *Oxnard* (Calif.) *Daily Courier* 29 Jan. 2/1 Shakespeare, incidentally, is found to be the best radio dramatist among classic playwrights.
- 1944 L. MACNEICE *Christopher Columbus* 12 The radio dramatist..must select his actuality material with great discrimination.
- 2000 C. NEWLAND & K. SESAY *IC3* 449 As well as being an award-winning theatre and radio dramatist, she is a published novelist, short-story writer and broadcaster.

radio fan *n.*

- 1920 *Ogden* (Utah) *Examiner* 18 Feb. 10/6 Ogden radio fans have effected an organization to promote interest in wireless telegraph and assist amateurs in establishing stations.
- 2003 *What Home Cinema* Jan. 32/2 The Sanyo has the look of a decent home cinema system and even has a built-in RDS tuner for radio fans and a useful clock timer.

radio interview *n.*

- 1923 *Appleton* (Wisconsin) *Post Crescent* 26 June 7/1 These radio interviews..are unique in the annals of interviewing. Here for the first time, a motion picture fan can hear an interview as it actually happens.
- 2003 S. BROWN *Free Gift Inside!* 202 The campaign for Book IV..was accompanied by..press junkets, television appearances, radio interviews,..and every other weapon in the arts marketing arsenal.

radio journalism *n.*

- 1926 *Davenport* (Iowa) *Democrat & Leader* 12 Feb. 14/2 Blind pastor at Nauvoo studying radio journalism.
- 1968 *Listener* 21 Mar. 380/2 When the war was over Ed Murrow went back home, the 'first authentic original' of radio journalism.
- 2006 *Guardian* (Nexis) 26 Oct. 40 His reports have been a simultaneous reminder of the power of radio

journalism and of the fact that Mr Humphrys is one of its best practitioners.

radio journalist *n.*

- 1924 *Times* 19 Apr. 7/2 What he wished to draw attention to was the almost certain appearance in the near future of the 'radio' journalist, who would develop a new technique, especially in the sphere of descriptive reporting.
- 2000 M. GAYLE *Turning Thirty* lxxv. 283 Her old flatmate's brother used to go out with Douglas Burton (then, the boy most likely to be on Prozac; now, a radio journalist in Cardiff).

radio listener *n.*

- 1919 *Independent* 12 July 56/2 In radiotelephony your own voice carries thru and is reproduced in the ears of any radio listener.
- 1996 T. KOPPEL & K. GIBSON *Nightline* xv. 356 He was the one who had to conduct a conversation with a panel, an audience, satellite guests, phone-in callers, and radio listeners.

radio listening *n.*

- 1923 *Davenport (Iowa) Democrat & Leader* 25 Mar. 2/1 (*headline*) Radio listening the rage.
- 1938 *Life* 6 June 38/1 The conquest of summer interference with radio enjoyment. Time was, and not long ago, when radio listening was difficult during the summer.
- 1997 *Media Week* 16 May 8/5 In terms of radio listening, BBC network radio mopped up the lion's share of audience.

radio news *n.*

- [1915 *Lima (Ohio) Daily News* 10 Jan. 6/6 A copy of a most unique publication, the Christmas edition of the Radio News, a paper issued including wireless news exclusively.]
- 1925 E. A. POWELL *Beyond Ultimate Purple Rim* xiii. 342 The gossip round the card table is..of the latest radio news from Europe.
- 2001 *Times* 14 Sept. II. 21/4 She resigned from the Beeb because of the totally daft plan to move radio news out of Central London.

radio organization *n.*

- 1915 *Bismarck (N. Dakota) Daily Tribune* 25 Dec. 1/6 The board of radio organization..is preparing amendments to existing laws to work out this scheme.
- 1962 A. NISBETT *Technique Sound Studio* x. 168 At a radio organization such as the BBC it is easy to feel spoiled for choice.
- 1995 *Daily Tel.* 16 Nov. 9/1 By allowing greater cross-ownership between newspaper, television and

radio organisations than at present, ministers believe companies can build domestic strength and compete more effectively overseas.

radio personality *n.*

- 1924 *Oakland (Calif.) Tribune* 16 May 20/4 The voting will decide what characteristics are essential to the successful announcer, and that the award, which is to be annual, will stimulate the development of radio personality.
- 1924 *Syracuse (N.Y.) Herald* 22 June v. 8/4 Major J. Andrew White, the most famous radio personality in the country, announcing the proceedings and giving the listeners the verbal picture of the Convention Hall.
- 1993 H. STERN *Private Parts* ix. 247, I could have glided through life, making a nice living as a radio personality.

radio producer *n.*

- 1922 *Ogden (Utah) Standard-Examiner* 5 Dec. 9/5 In the last year, radio producers say this amount has been practically doubled.
- 1955 T. H. PEAR *Eng. Social Differences* ix. 195 'Living by the clock' is a virtue in a radio-producer.
- 1998 L. FORBES *Bombay Ice* (1999) 14, I have augmented my radio producer's wages by shooting videos about our daily criminal reality for late night television.

radio production *n.*

- 1922 *Fayetteville (Arkansas) Democrat* 9 Sept. 2/4 Edward Smith and players who made such a pronounced success recently in the radio production of 'The Wolf' will read the story in three episodes.
- 1994 *Church Times* 21 Oct. 19/2 She [*sc.* Mary Shelley] got conned into the vanity of Romantic intellectualising, and this radio production followed her.

radio programme *n.*

- 1921 *Oakland (Calif.) Tribune* 29 Sept. 12/3 The many amateur operators, most of them Boy Scout age, have been especially invited to 'sit in' on this radio program.
- 1925 A. H. MORSE *Radio* v. 78 There need be no limitation of the public enjoyment of the radio programme.
- 2000 S. MACKAY *Heligoland* vi. 90 She'd had to switch off a radio programme about the unwanted girl babies of China.

radio reporter *n.*

- 1924 *Gleaner (Kingston, Jamaica)* 5 Apr. 2/1 (*adv.*) Radio News for every member of the family by experienced trained radio reporters plus technical radio authoritative information for the fan that makes his own.
- 2000 N. DeMILLE *Lion's Game* xii. 100 The radio reporter and the anchorlady were going on about the Swissair tragedy, and someone recalled the Saudi air tragedy.

radio revue *n.*

- 1924 *Appleton (Wisconsin) Post-Crescent* 13 Feb. 11/6 'Greenwich Village Follies' radio revue direct from stage.
- 2004 *Advertiser (Adelaide)* (Nexis) 23 Feb. 32 They repaid it with an Adelaide-oriented 60-minute comedy gig in the manner of an olden-days radio revue songs and skits and a quiz on Adelaide general knowledge.

radio script *n.*

- 1930 *Port Arthur (Texas) News* 9 Mar. 4/7 Beginning a career on a metropolitan newspaper, Bonnie C. Jacks turned to radio script writing as a part time job.
- 1941 B. SCHULBERG *What makes Sammy Run?* ii. 30 He had written a radio script.
- 2002 M. BEAUMONT *Book, Film, T-shirt* (2003) xxiii. 275 There were layouts for press ads, TV storyboards, radio scripts, in-store posters and what we know in the trade as shelf-wobblers.

radio serial *n.*

- 1926 *Chicago Sunday Tribune* 3 Jan. VIII. 8/1 (*heading*) Radio serial makes its bow in Great Britain.
- 1942 *New Yorker* 25 July 11/2 (*caption*) It's just like a radio serial—my daughter's husband deserted her, Father lost his job, and my son here is A.W.O.L.
- 1992 J. STERN & M. STERN *Encycl. Pop Culture* 151/1 He..had already made a local name for himself starring in an antibigotry radio serial called 'One out of Seven'.

radio series *n.*

- 1923 *Hartford (Connecticut) Courant* 26 Mar. 8/8 The following talk was given at 'The Courant' radio station WDAK... It is the fourth of the Aetna radio series.
- 1926 *Dunkirk (N.Y.) Evening Observer* 9 Jan. 6/3 As was the case with last year's Victor [Talking Machine company] radio series, this year's program will feature some of the foremost operatic and concert artists in the world.
- 1995 *Sun (Baltimore)* 8 Oct. 19/4 A number of prominent actors..are the readers in an interesting Sunday radio series that began airing last month on WJHU-FM (88.1).

radio singing *n.*

- 1924 *Oakland (Calif.) Tribune* 25 July 6/6 (*heading*) Convict wins parole with radio singing.
 1999 *Amer. Music* 17 377 [The] association with radio singing seems particularly apt.

radio spot *n.*

- 1927 *Times Recorder (Zanesville, Ohio)* 7 Mar. 3/1 (*advt.*) Make an appointment to visit 'Radiola Studio', the most interesting radio spot in Zanesville.
 1930 *Oakland (Calif.) Tribune* 1 July 26/5 (*headline*) Patriotic airs herald fourth [*sic*] on radio spots.
 1994 *Wall St. Jrnl.* 25 Nov. A5/2 AK ran radio spots and a nightly soap opera..on a local cable-TV channel.

radio studio *n.*

- 1922 *Fort Wayne (Indiana) Jrnl.-Gaz.* 22 Jan. 3/1 From the Westinghouse Radio studio the first program to be sent broadcast by the station KYW, located at Chicago, is given out.
 1994 *Guardian* 24 Oct. II. 25 (*advt.*) Once you have successfully completed training you will be operating the technical equipment in our 30 radio studios.

radio writer *n.*

- 1922 *News-Sentinel (Fort Wayne, Indiana)* 20 July 11/3 Many radio writers contend that the set using the crystal detectors cannot be amplified.
 1937 *Sun (Baltimore)* 7 Aug. 4/1 'The Big Shot'..is just another mess of plottage that some RKO Radio writers sold their birthrights for.
 1944 L. MACNEICE *Christopher Columbus* 8 The radio writer has to think of words in the mouths of actors.
 1993 *Diffusion EBU* Spring 8/2 The most prolific radio writer among detective novelists was John Dickson Carr.

c. Designating devices controlled or operated by radio, as *radio bomb*; designating vehicles equipped with two-way radio for communicating information, directions, etc., as *radio cab*, *taxi*, *van*.

Cf. *radio car n.* at Compounds 3.

radio bomb *n.*

- 1914 *Washington Post* 24 Jan. 5/4 Had radio bomb for girl. Man able to kill by wireless gets three-year term.
 2005 *Coventry Evening Tel.* (Nexis) 17 June 12 Not a flinch at the prospect of portable radio bombs or other deadly devices planted in chosen cities anywhere.

radio cab *n.*

- 1933 *Port Arthur (Texas) News* 12 Dec. 4/1 The new radio cabs are so arranged that you cannot tune them on unless the flag on the meter is down.
- 2006 *Financial Times* (Nexis) 17 June 19 Mexico City's kidnappings often happen in taxis and you should never hail a cab from the street; order a radio cab from a sitio, or taxi rank.

radio taxi *n.*

- 1925 *Manitoba Free Press* 20 June 48/6 (*advt.*) Anywhere in the city—\$1. Special attention to hospital and theatre calls. Radio Taxi Co.
- 1935 A. G. MACDONELL *Visit to Amer.* ii. 23 A second fleet of taxis is..equipped with radio loud-speakers. When I landed in New York it was impossible to hire a radio-taxi.
- 2001 *National Post (Toronto)* 23 May c8/2 Travellers should only use radio taxis..or taxis based at designated stands.

d. Chiefly *Astron.* Connected with the natural emission of radio waves; designating objects considered as sources of radio waves or observed at radio wavelengths.

radio emitter *n.*

- 1954 *Ann. Reg. 1953* 373 Future accurate measurements of the positions of cosmic radio emitters.
- 1990 *Rev. Sci. Instruments* **61** 3070 For over 20 years it has been known that the Earth is an intense radio emitter in the frequency range from about 100 to 500 kHz.

radio flux *n.*

- 1951 *Monthly Notices Royal Astron. Soc.* **111** 366 The intensity of the radio flux from M31 observed on the Earth at a wavelength of 1.89 metres is 10^{-24} watts/square metre/c.p.s.
- 1992 S. P. MARAN *Astron. & Astrophysics Encycl.* 630/1 The Wolf (or Zürich) number is still the reference index of solar activity although other indices (e.g., daily measurements of the 2800-MHz solar radio flux) are of increasing usefulness.
- 2003 *Philos. Trans. (Royal Soc.)* **361** 96 Other indicators of solar activity..include sunspot numbers, solar diameter, solar radio flux at 10.7 cm and the *aa* index, which gives a measure of the magnitude of the solar magnetic field at the Earth.

radio galaxy *n.*

- 1959 *Oakland (Calif.) Tribune* 30 Nov. 22/3 A Soviet astrophysicist offered a new theory today on the so-called radio galaxies.
- 1991 C. A. RONAN *Nat. Hist. Universe* 66/2 Radio galaxies also emit at X-ray and gamma-ray wavelengths.
- 2003 J. SCALZI *Rough Guide to Universe* xiii. 196 Some astronomers believe that radio galaxies actually are quasars, positioned relative to our point of view so that the disc of material that has accreted

around the black hole blocks the quasar's brightness.

radio interferometer *n.*

- 1952 *Proc. Royal Soc. A* **211** 23 (*title*) A new radio interferometer and its application to the observation of weak stars.
- 1990 J. GRIBBIN & M. REES *Cosmic Coincidences* (1991) vi. 168 There is a very small, variable source of radio noise right at the galactic centre. This source is too small to be resolved by radio interferometers.

radio interferometry *n.*

- 1950 *Proc. Royal Soc. A* **204** 276 Barrell (1947) has suggested the use of radio interferometry for the measurement of length.
- 1990 *Sci. Amer.* Apr. 27/2 A particularly fruitful technique has been radio interferometry, in which multiple antennas are linked together to improve sensitivity and resolution.
- 2003 D. S. ROBERSTON *Phase Change* ii. 20 Computerized radio interferometry..routinely achieves an angular resolution better than a thousandth of a second of arc.

radio jet *n.*

- 1972 *Monthly Notices Royal Astron. Soc.* **158** 431 For 3C 2, the data suggest an identification of the radio jet with an optical one.
- 2002 *Astron. in UK* 19/3 Examples of the remarkable kind of source which can be studied by this means are the 'superluminal' radio jets ejected from active galactic nuclei.

radio source *n.*

- 1950 *Monthly Notices Royal Astron. Soc.* **110** 519 The five major extra-galactic nebulae in the selected area are listed..together with the radio sources which appear to be associated with them.
- 1971 *Sci. Amer.* May 56/3 Before 1960 radio astronomers had identified and catalogued hundreds of radio sources.
- 1989 M. LONGAIR in P. DAVIES *New Physics* vi. 178/1 (*caption*) There is a compact radio source coincident with the nucleus of the galaxy.

radio universe *n.*

- 1960 R. B. RODMAN & C. M. VARSAVSKY tr. I. S. Shklovsky *Cosmic Radio Waves* vi. 355 Further investigations of the variations in the cosmic radio-wave background at high galactic latitudes will undoubtedly reveal new peculiarities of the 'radio universe'.
- 1996 *EDUCOM Rev.* Jan.–Feb. 19/1 The same technologies..enable radio astronomers..to image the

radio universe with unprecedented resolution.

C2. Forming adjectives.

Cf. RADIO- *comb. form*³.

a.

radio-emitting *adj.*

- 1958 *Proc. Royal Soc. A.* **248** 302 The diameters of the radio-emitting regions are respectively, 25, 68, 100, 87, 40, 80 and 40 kpc.
- 1993 *Sci. Amer.* June 30/2 One radio-emitting galaxy, the peculiar Minkowski's Object, shows what appears to be a newly formed dwarf galaxy located at a bend in the jet.

radio-receiving *adj.*

- 1913 *Washington Post* 17 Mar. 2/5 Strains of ragtime picked up by ordinary radio receiving set.
- 1936 *Discovery* Mar. 69/2 Some 70 radio-receiving observatories all round the earth.
- 2000 T. CLANCY *Bear & Dragon* xlvii. 720 The Rivet Joint was an extensively modified windowless version of the old Boeing 707, crammed with radio-receiving equipment.

radio-transmitting *adj.*

- 1915 *Lincoln (Nebraska) Daily Star* 25 July 8/4 Natalia the Dolphin, which has the best radio-transmitting apparatus in the United States navy,..by breaking in with her powerful waves attempted to neutralize or disarrange the messages from the shore.
- 1935 C. G. BURGE *Compl. Bk. Aviation* 511/1 The purpose of the radio compass is to determine whether or not one is flying directly towards a radio-transmitting station.
- 2006 *Appeal-Democrat (Marysville, Calif.)* (Nexis) 13 Aug., Minors selected for the program would wear radio-transmitting bracelets to allow the Probation Department to track their locations.

b.

radio-equipped *adj.*

- 1922 *Syracuse (N.Y.) Herald* 3 Apr. 12/3 One that will appeal to most of us, is the radio equipped barber shop, where one can get a shave and hear the latest news and concerts.
- 1963 A. LUBBOCK *Austral. Roundabout* 36, I wouldn't like to say what my radio-equipped bikes and plane save me in time and labour.
- 1990 *Salt Water Sportsman* Dec. 31/1 The Coast Guard will begin checking for the presence of an FCC Ship Station License on radio-equipped vessels during boarding inspections.

radio-linked *adj.*

[1948 *Daily Messenger (Canandaigua, N.Y.)* 22 June 2/5 Six stations linked. Radio-linked with five other stations, located at Cherry valley, near Albany.]

1974 H. R. F. KEATING *Bats fly Up* iii. 33 Ghote, in yet a third radio-linked car, would be a useful addition to the team.

1996 *Independent* 10 Jan. II. 2/3 Push the small blue switch on the portable key chain and radio-linked alarms will ring in some not-too-distant..control room.

radio-minded *adj.*

1928 *Charleston (W. Va.) Daily Mail* 9 Aug. 7/1 Comparisons..are striking with respect to radio-minded nations.

2005 *Denver Post* (Nexis) 4 Mar. FF9 Alicia Keys is to soul music what Norah Jones is to folk—easily accessible, jazz-infused and made for the radio-minded public.

radio-steered *adj.*

1917 *Nature* 2 Aug. 442/2 Attempts to develop a radio-steered torpedo.

2005 *Washington Post* (Nexis) 30 Sept. B6 Eighty percent of the Marine Corps' radio-steered TOW antitank missiles had 'safety problems', including rocket motors that tended to misfire.

C3.

Cf. RADIO- *comb. form*³.

radio alarm *n.* (*a*) a burglar alarm, fire alarm, etc., which transmits a radio signal to a remote location when triggered; (*b*) a facility enabling a radio to be set to switch on automatically at a chosen time; a radio alarm clock.

1922 *Atlanta Constit.* 21 May 1 (*caption*) A radio alarm system will be installed on every building, which will automatically act at the start of a fire and give the alarm.

1949 *Times* 4 Nov. 3/6 (*advt.*) It also incorporates a first-class electric clock, and a radio alarm which wakes you.

1987 *Guardian* (Nexis) 22 Sept., He emphasised the importance of radio alarms in preventing crime and fires.

2000 J. BRYANT & R. L. HEATH *Human Communication Theory & Res.* (ed. 2) i. 1 You drift into sleep. Then the radio alarm turns on. Another day has begun.

radio alarm clock *n.* (*a*) an alarm clock activated by a radio signal (now *rare*); (*b*) a combined radio and alarm clock, which can be set so that the radio switches on automatically at a chosen time.

1922 *Washington Post* 22 Aug. 17/8 A radio alarm clock... When the proper combination of dots and dashes is received the last signal operates a relay that closes the circuit and rings a bell.

- 1939 *Southeast Economist (Chicago)* 4 May 1/1 Now..you can wake up with music; that is, if you have one of the new-fangled radio alarm clocks.
- 2003 R. S. BRIDGER *Introd. Ergonomics* xv. 446 Set the alarm on a radio alarm clock when it is in 'time' mode.

radio altimeter *n.* an altimeter which works by emitting a radio signal and measuring the time it takes to be reflected back from the ground.

- 1927 *Davenport (Iowa) Democrat & Leader* 14 Apr. 19/3 The radio altimeter, soon to be developed, apparently, to record so delicately and correctly that safe landings can be made in fog.
- 1953 R. CHISHOLM *Cover of Darkness* i. xii. 123 My Mosquito had a radio altimeter, a device which gave absolute readings of height.
- 1991 *Pilot* Nov. 11/1 At 420 knots and with a 'rad-alt' (radio altimeter) height of 250 feet..we skim over Wrenbury and Hack Green.

radio amateur *n.* a person who picks up or transmits radio messages as a hobby.

- 1916 *Lit. Digest (N.Y.)* 1 Jan. 13/1 But there will be a lone radio amateur on the alert who has seen the approaching fleet.
- 1991 V. BUGLIOSI *Sea will Tell* xv. 125 At the time [sc. 1974], there existed the Mickey Mouse Network, an extensive chain of radio amateurs operating in the Pacific.

radio beacon *n.* = BEACON *n.* 6d.

- 1919 *Pop. Sci. Monthly* Oct. 49/2 What is a radio beacon?
- 1966 D. FRANCIS *Flying Finish* ii. 27, I flew contentedly along..checking my direction by the radio beacons over which I passed.
- 1992 *Equinox* Aug. 55/2 An Emergency Position Indicating Radio Beacon..is required on all Canadian maritime vessels over 20 metres in length.