Dear Contributor,

Thank you for participating in the public consultation of the ICNIRP draft guidelines.

Please note that it is important that ICNIRP understands exactly the points that you are making. To facilitate our task and avoid misunderstandings, please:

* be concise
* be precise
* provide supporting evidence (reference to publication, etc.) if available and helpful.

**Please provide your details below as per the online form and the provision of the privacy policy**

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| Last name, first name: BEECKMAN, Pierre | Email address: Your email address. | Affiliation (if relevant): Signify |
| If you are providing these comments officially **on behalf** of an organization/company, please name this here: Signify (www.signify.com) | | |

**Please complete the comments table:** Please use 1 row per comment. If required, please add extra rows to the table.

|  | **Document**  **(Guidelines, App A,**  **App B)** | **Line Number**  **#** | **Type of comment (General/ Technical/ Editorial)** | **Comment** | **Proposed change** | **Context** |
| --- | --- | --- | --- | --- | --- | --- |
| **1** | Guidelines | N.A. | General | The ICNIRP Guidelines are often taken as the basis for regulation and standards for safety and health effects of humans resulting from exposure to non-ionizing radiation. Several global and regional standards development organisations (SDOs) and regulators will apply these guidelines in the future.  It would have been convenient for all potential future applicants if the draft RF Guidelines contained a Foreword indicating the key differences (and rationale for the changes) with ICNIRP 1998. | Add in the next draft or in the final publication a Foreword indicating the key differences (and rationale for the difference) with ICNIRP 1998. | See comment. |
| **2** | Guidelines | Subclause 4.3.3.2 | Technical | In 4.3.3.2 reference is made specific types of exposure to EMFs. From the content of this subclause and the associated resulting Table 3 it is assumed that this concerns EMF exposure from specific technologies and applications where very high energy pulsed power sources may be present e.g. in military, special industrial, scientific or medical environments. To avoid that in practice, Table 3 will be unconditionally applied to assess any type of RF source, it would be helpful for future applicants to indicate for which type of EMF sources 4.3.3.2 and the Table 3 restrictions possibly would apply. This is also to avoid unnecessary effort and cost to demonstrates compliance with the Table 3 requirements (or alternatively the corresponding reference levels given in Table 6) for all kinds of common low-energy non-pulsed EMF sources. Also, the fact that the resulting basic restrictions of Table 3 do not allow an exposure ≥ 6 min, do indicate that this is a special case, that in fact is only practical for controlled workplace environments. See also next comments 3 and 4. | Add in 4.3.3.2 for which type of EMF sources the rapid temperature rise may impose a risk. | See comment. |
| **3** | Guidelines | 4.3.3.2 and Table 3 | Technical | A time period of 6 min is chosen as the maximum allowed duration of exposure to pulsed-type of EMFs? The reason for choosing 6 min is unclear? Why 6 min and not 4 min or 10 min? Duration of exposure and level of exposure are interchangeable. | Add rationale for selection of a maximum exposure duration of 6 min. | See comment. |
| **4** | Guidelines | Subclauses 5.1.3 and 5.1.5 and Table 3 | Technical | These subclauses 5.1.3 and 5.15 and the associated Table 3 introduce new metrics *SA* and *H*tr for basic restrictions concerning local exposure of pulsed-type EMFs. As it assumes a relatively short duration of exposure (< 6 min), this cannot be relevant for general public exposure scenarios. In practice, general public cannot and should not be confronted with situations where exposure duration is to be limited to below 6 min. So, this scenario, and the general-public part of Table 3 is not applicable to general public. General-public exposure should be intrinsically safe and should not include exposure duration limitations.  See also comment 2. | As this exposure scenario of 5.1.3 and 5.1.5 is not feasible for general public in practice, this should be made clear in 5.1.3 and 5.1.5. Also, in Table 3, the rows on general public must be deleted. Furthermore (editorial), in 5.1.3 and 5.1.5, for convenience of the reader, reference to Table 3 should be made. | This comment is made in the context that it should be clear what the potential impact of the updated RF Guidelines will be on IEC EMF product or generic standards. |
| **5** | Guidelines | 5.2, Table 5 and Table 6 | Technical | The specification of the reference levels in the Tables 4, 5 and 6 has become much too complicated. Also because of the many notes below each of these tables and the cross-references to other tables in these table notes.  Table 5 and Table 6 are for local exposure. The way how they are now specified has become quite complex. This is somehow contradictory with the aim for specifying reference levels, i.e. to provide a relatively simple means to demonstrate compliance in practice. It would be helpful also if it would be explained for which types of EMF sources the reference levels of Table 5 and Table 6 typically apply. | Simplify the system of reference level specifications for the sake of practical convenience.  Give clear guidance and or scope information for which types of EMF sources or exposure distances the Tables 5 and 6 are relevant. | See comment. |
| **6** | Guidelines | Guidelines5.2, Table 5 and Table 6 | Technical | Again (see also previous comment 4), a maximum exposure of 6 min, specified in Table 6, cannot be applied in practice for general public. Duration of exposure of general public should be unrestricted as it cannot be controlled. | Delete the general public exposure rows in Table 6 or change the 6-min exposure duration limitation to >6 min exposure, and adapt the limit values resulting from the change of the duration. | See comment. |
| **7** | Guidelines | 5.4 | Technical | Subclause 5.4 addresses simultaneous exposure to multiple frequency fields of different frequencies. The basic approach in this part has not changed with respect to the approach in ICNIRP 1998. This is unfortunate. The frequency-domain approach and the summation of multiple frequency fields is far beyond how multiple EMF sources and multiple frequencies occur in practice today. The existing summation approach of the ICNIRP 1998 Guidelines maybe were still justifiable by the fact that two to three decades ago, RF emitters where narrow band emitters, almost emitting at a distinct frequency. Also, these multiple sources could be located at different positions with respect to an exposed person and they could be considered to emit at different frequencies in an incoherent way.  In the past decades however, a single physical apparatus or RF transmitting system often includes of a source of EMF which is a broadband RF source emitting at various frequencies in a coherent fashion.  Therefore, considering different sources as incoherent is far from appropriate and practical and will lead to overly conservative exposure limits. | It is proposed to add in 5.4 also summation approaches for broadband coherent type of EMF sources as these occur frequently in many practical situations. Consider e.g. IEC TR 62630:2010 (Guidance for evaluating exposure from multiple electromagnetic sources). | See comment. |