

# **BBF RFC 89: The minimum information for a qualified BioBrick**

Mubing Zhou  
Junqiu Zhang  
Jiankui He

September 22, 2012

## **1. Purpose**

Since the information of many existing BioBricks is incomplete, thus the usage of the BioBricks will be affected. It is necessary to standardize the minimum information required for a qualified BioBrick. Furthermore this standardization will reduce the time to locate and find a BioBrick. So it is essential to create a default template of storing the information of BioBricks.

## **2. Relation to other BBF RFCs**

This BBF RFC is intended to replace the following standards:  
BBF RFC52: Documentation of BioBrick parts

## **3. Copyright Notice**

Copyright (C) The BioBricks Foundation (2012). All Rights Reserved.

## **4. Minimum information for a BioBrick**

To build a qualified BioBrick, the following information **MUST** be included:

- Name of the BioBrick
- Fundamental type of the BioBrick
- General description of the BioBrick
- Status of the BioBrick
- Categories that the BioBrick falls in
- Author and contact information
- Sequence and sequence length
- Creation date

### **4.1 Name of the BioBrick**

A BioBrick MUST contain a valid name. A name example: BBa\_I14050. To see how to name a part, please refer to [http://partsregistry.org/Basic\\_Biobrick,\\_example\\_1](http://partsregistry.org/Basic_Biobrick,_example_1)

## **4.2 Fundamental type of the BioBrick**

The author of a BioBrick MUST assign the BioBrick a corresponding type. The choice has been limited by promoter, RBS, coding sequence, terminator, plasmid backbone and others. The choice 'others' means that the BioBrick is not a promoter, not a RBS, not coding sequence, not a terminator nor a plasmid backbone. The author can give the detail description in 4.3.

There can be only one type specified.

## **4.3 General description of the BioBrick**

A description is a MUST requirement for a qualified BioBrick. The function of the BioBrick SHOULD be written into the description if available. And characteristics as well as the physical properties and the best experiment environment are RECOMMENDED. Remember that any offended words or anything irrelevant to synthetic biology SHALL NOT be allowed.

## **4.4 Status of the BioBrick**

In order to let users clearly know whether the BioBrick is working or not the status of the BioBrick SHOULD be specified. And the choices of the status are recommended as the following: available, building, cancelled, deleted, missing, planning, sent, unavailable.

## **4.5 Categories that the BioBrick falls in**

Any BioBrick SHALL fall in at least one category in the following four categories shown in figure 1. The classification MUST be specified to at least the second level.

The form of the BioBrick category SHALL be like this:

// Chassis/ Yeast;

// Function/ Functions/Biofuels

The “//” indicates the beginning of a classification. A BioBrick can have more than one classification if there is any.

Figure 1 is the classification tree of the BioBricks. There are three levels; different levels are distinguished according to indentation.

For example, 'Function', 'Chassis', 'Type' and 'Device' are the first levels.

'Plasmidbackbone', 'Promoter' and 'RBS' are second levels in Type. And 'Biosynthesis',

'Chromatin remodeling' and 'Enzyme' are the third levels in 'Protein Coding Sequence'.

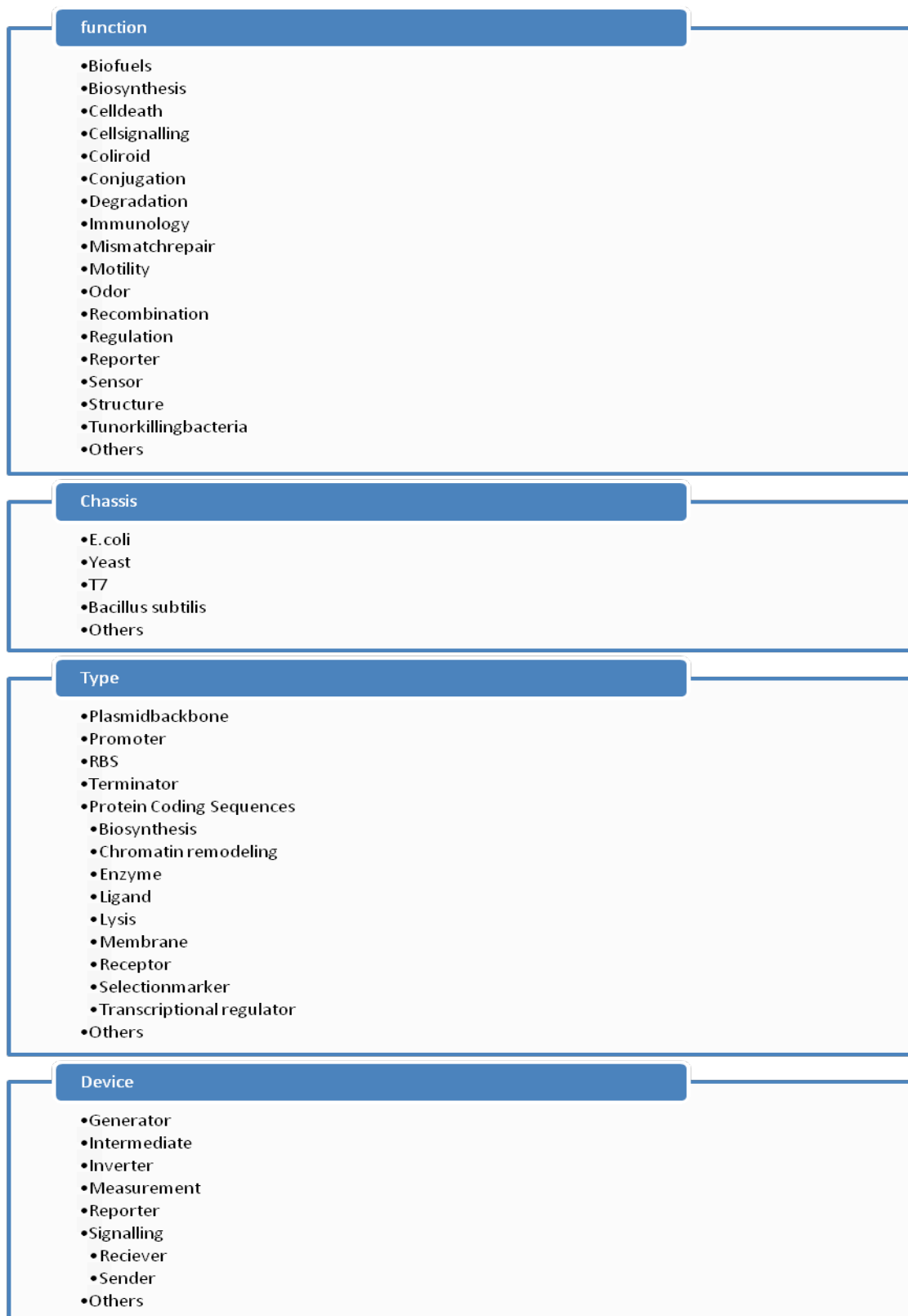


Figure 1

#### **4.6 Author and contact information**

Every BioBrick MUST contain the names of the authors or designers. The contact information, for example the email address, is OPTIONAL. And the project information CAN be written into this part is the author(s) want(s).

#### **4.7 Sequence and sequence length**

A BioBrick MUST has a specified sequence of base pairs (or single chain). And the sequence MUST be available. Although users can get the sequence length by counting base pairs, convenience will be improved is a sequence length is provided.

#### **4.8 Creation date**

A BioBrick SHOULD contains a creation date that recorded the date when the BioBrick is created. This is a fundamental information for a BioBrick but not essential.

### **5. Author's Contact Information**

Mubing Zhou, [mubingzhou@gmail.com](mailto:mubingzhou@gmail.com)

Junqiu Zhang, [melanie19950103@hotmail.com](mailto:melanie19950103@hotmail.com)

Jiankui He, [jiankuihe@gmail.com](mailto:jiankuihe@gmail.com)

### **6. References**

Arend Slomp and David Ekkers "BBF RFC 52: Documentation of BioBrick parts"

Conboy et al. "Definitions and Measures of Performance for Standard Biological Parts"  
<https://dspace.mit.edu/handle/1721.1/31335>

[http://partsregistry.org/Basic\\_Biobrick,\\_example\\_1](http://partsregistry.org/Basic_Biobrick,_example_1)