A Multifrequency MAC Specially Designed for Wireless Sensor Network Applications

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Algorithm 1: Frequency Number Computation

Input: Node α's ID (ID_α), and node α's neighbors' IDs within two communication hops.
Output: The frequency number ($FreNum_\alpha$) node α gets assigned.

```
index = 0; FreNum_α = -1;
repeat
    Rnd_α = Random(ID_α, index);
    Found = TRUE;
    for each node β in α's two communication hops do
        Rnd_β = Random(ID_β, index);
        if (Rnd_α < Rnd_β) or (Rnd_α == Rnd_β and ID_α < ID_β);
         then
            Found = FALSE; break;
        end
    end
    if Found then
        FreNum_α = index;
    else
        index ++;
    end
until FreNum_α > −1;
```

CCS Concepts: • **General and reference → Computing standards, RFCs and guidelines**.

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1 INTRODUCTION

2 MMSN PROTOCOL

2.1 Frequency Assignment

A natural candidate is an increasing geometric sequence, in which

$$P(t) = \frac{b^{\frac{t+1}{T+1}} - b^{\frac{t}{T+1}}}{b-1} \tag{1}$$

where $t = 0, ..., T$, and b is a number greater than 1.

2.1.1 *Exclusive Frequency Assignment.*

In exclusive frequency…

3 SIMULATOR

If the model checker requests …

Name	Phone	Age
Peter	1234	17
Anna	4321	25

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