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Re:	Category: AWD comments / Area: Chapter 15.3.5 (DL-PHY) "Comments on AWD 15.3.5 DL-PHY"
Abstract	Comments on AWD 15.3.5 DL-PHY
Purpose	To be discussed and adopted by TGm for the 802.16m AWD.
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Comments on AWD 15.3.5 DL-PHY

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1. Introduction

This contribution provides the corrected AWD text proposal to Random Sequence Generation. In 15.3.5.3.3, "Random sequence generation" is not correct and not clear. Please refer to the Suggested Remedy.

2. Proposed AWD Text Modification

[In IEEE 802.16m-09/0010r1a, Section 15.3.5.3.3, replaced the following texts]

15.3.5.3.3 Random sequence generation

The permutation sequence generation algorithm with 10-bit SEED (Sn-10, Sn-9,…,Sn-1) shall generate a permutation sequence of size M by the following process:

1) Initialization

a) Initialize the variables of the first order polynomial equation with the 10-bit seed, SEED. Set d1 = floor(SEED/2^5) + 1 and d2 = SEED mod 2^5.

b) Initialize the maximum iteration number, N=4.

c) Initialize an array A with size M with the numbers 0, 1, … , M-1 (i.e. A[0]=0,1]=1,M-1]=M-1).

d) Initialize the counter i to M-1.

e) Initialize x to -1.

2) Repeat the following steps if i > 0

a) Initialize the counter j to 0.

b) Repetition loop as follows,

c) Increment x and j by 1.

d) Calculate the output variable of y = {(d_1*x + d_2) mod 1031} mod M.

e) Repeat the above step a. and b., if y>i and j<N.

f) If y > i, set y = y mod i.

g) Swap the ith and the yth elements in the array (i.e. perform the steps Temp= A[i], A[i]=A[y], A[y]=Temp).

h) Decrement i by 1.

3) PermSeq[i] = A[i], where 0<=i<M.

[By the following correct texts]

==========*Start of Proposed Text*==========

15.3.5.3.3 Random sequence generation

The permutation sequence generation algorithm with 10-bit SEED (Sn-10, Sn-9,…,Sn-1).

M: Permutation sequence size
A(i)=i , i=0,1,2…M-1

d_1=floor(SEED/2^5)+1
d_2=SEED mod 2^5
N=4
i=M-1
x=-1
y=0

```
while (i>0)
{
    j=0
    while(j<N)
    {
        if (y<i)
        {
            x=x+1
            y={( d1*x+d2) mod 1031} mod M
        }
        else
        {
            y=y mod i
        }

        j=j+1
    }
Temp=A[i]
A[i]=A[y]
A[y]=Temp
i=i-1
}
```

PremSeq[i]=A[i]

==========*End of Proposed Text*==========