

An Approach Towards Convergence Of Walsh Codes With SDH Virtual Containers For nth Generation Wireless

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A simulation using MATLAB is presented with the following notation:

Walshinp :is one of the first H64 matrix(Wlash Hadamard) codes of 64 bits except walsh zero

Pncodelinp:Psuedo Random Number type one input

Pncode2inp:Psuedo Random Number type two input

Pncodeloup:psuedo Random Number type one output

Pncode2oup:psuedo Random Number type two output

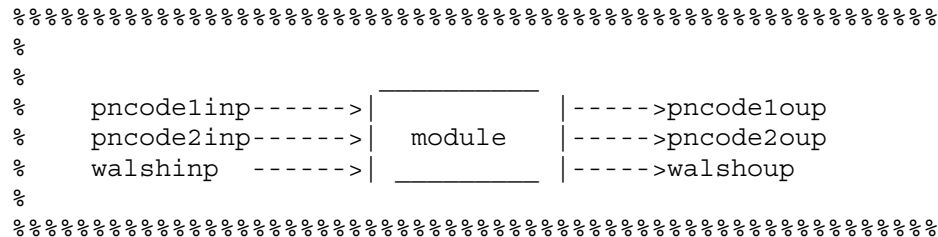
Walsh output: is one of the first H64 matrix(Hadamard Matrix of order 64) except walsh code zero

This is a routine which can generate an output based on a test case of fulfilling a requirement: We have in STM-1 63 digital streams each of 2.048 Mbps data. We may want to identify an nth generation mobile subscriber's data with a digital stream of any numeric number say 1 to 63 (VC12) with a numbering format 111 to 373 format (Reference :ITU-T G.703& G.707)

The FPGA's and IP VIP ASICs must be generated so that this primitives are internalized.

This simulation also takes into account of the air interface dynamics of SARA(Supplemental Air Resource Allocation)

Max number of supplemental channels that are required to be invoked for generating equivalent of 2 MBps data depends on a number of factors internal to the implementation of nth generation wireless air interface standards



% This system has 3 inputs and 3 outputs as shown above :
% if i supply one input, the other 2 inputs should be initialized to 0
% the system supplies all the three outputs

```
% This example has random values as walsh codes, the absolute binary values (of length 64) can be imported into matlab from an excel sheet
```

```
pncode1=[1;2;3;4;5;6;7;8;9;10];
```

```
pncode2=[111;112;113;121;122;123;131;132;133;141];
```

```
walsh=[5;6;7;8;9;10;11;12;13;14];
```

```
pncodelinp=input('enter the pncodelinp else enter 0');
```

```
pncode2inp=input('enter the pncode2inp else enter 0');
```

```
walshinp=input('enter the walshinp else enter 0');
```

```
data_thruput=input('enter the required data thruput in mega bytes');
```

```
if ( pncodelinp ~= 0 )
```

```
    rindex=find(pncode1 == pncodelinp);
```

```
elseif ( pncode2inp ~= 0 )
```

```
    rindex=find(pncode2 == pncode2inp);
```

```
elseif ( walshinp ~= 0 )
```

```
    rindex=find(walsh == walshinp);
```

```
end
```

```
    fprintf(1,'The pncode1 in the fundamental channel is %d\n',pncode1(rindex));
```

```
    fprintf(1,'The pncode2 in the fundamental channel is %d\n',pncode2(rindex));
```

```
    fprintf(1,'The walsh code in the fundamental channel is %d\n',walsh(rindex));
```

```
no_of_channels=data_thruput/2;
```

```
fprintf(1,'The supplemental channels in the order pncode1 pncode2 walsh code are\n');
```

```
for i=1:no_of_channels
```

```
    fprintf(1,' %d %d %d\n',pncode1(i),pncode2(i),walsh(i));
```

```
end
```

```
clear all;
```