

Biblioteka IEEE.numeric_std

Użycie biblioteki zalecane jest przy konwersji typów, zwykle w przypadku konieczności wykonywania operacji arytmetycznych na typach wektorowych.

Przykład:

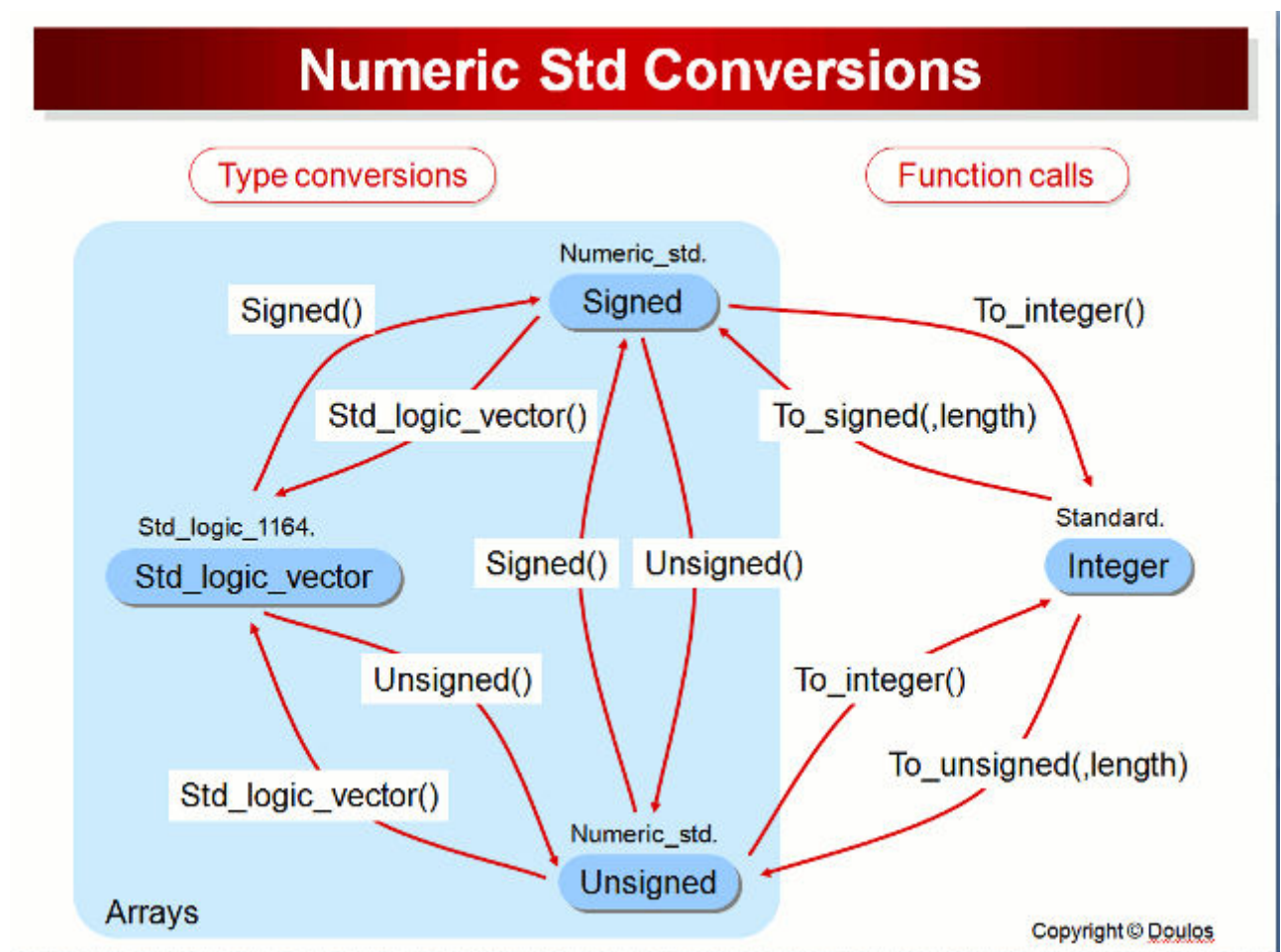
Konwersje między typami *integer* i *std_logic_vector*

```
signal s_int : integer range 0 to 15;  
signal s_vec : std_logic_vector ( 3 downto 0 );  
  
s_int <= to_integer( unsigned( s_vec ) );  
s_vec <= std_logic_vector( to_unsigned( s_int, 4 ) );
```

Materiały ze strony:

http://www.doulos.com/knowhow/vhdl_designers_guide/numeric_std/

Konwersje typów:



Dostępne operatory i funkcje:

Summary of NUMERIC_STD

+ - * / rem mod
< <= > >= = /=

UNSIGNED ■ UNSIGNED
UNSIGNED ■ NATURAL
NATURAL ■ UNSIGNED
SIGNED ■ SIGNED
SIGNED ■ INTEGER
INTEGER ■ SIGNED

sll srl rol ror

UNSIGNED ■ INTEGER
SIGNED ■ INTEGER

not and or nand nor
xor xnor

UNSIGNED ■ UNSIGNED
SIGNED ■ SIGNED

TO_INTEGER [UNSIGNED] return INTEGER
TO_INTEGER [SIGNED] return INTEGER
TO_UNSIGNED [NATURAL, NATURAL] return UNSIGNED
TO_SIGNED [INTEGER, NATURAL] return SIGNED
RESIZE [UNSIGNED, NATURAL] return UNSIGNED
RESIZE [SIGNED, NATURAL] return SIGNED