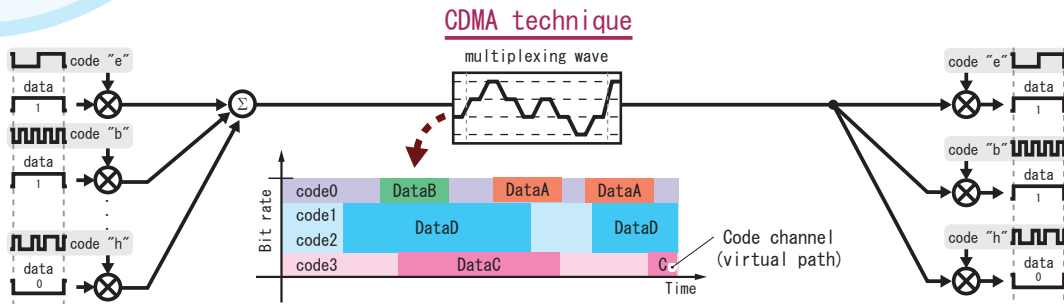
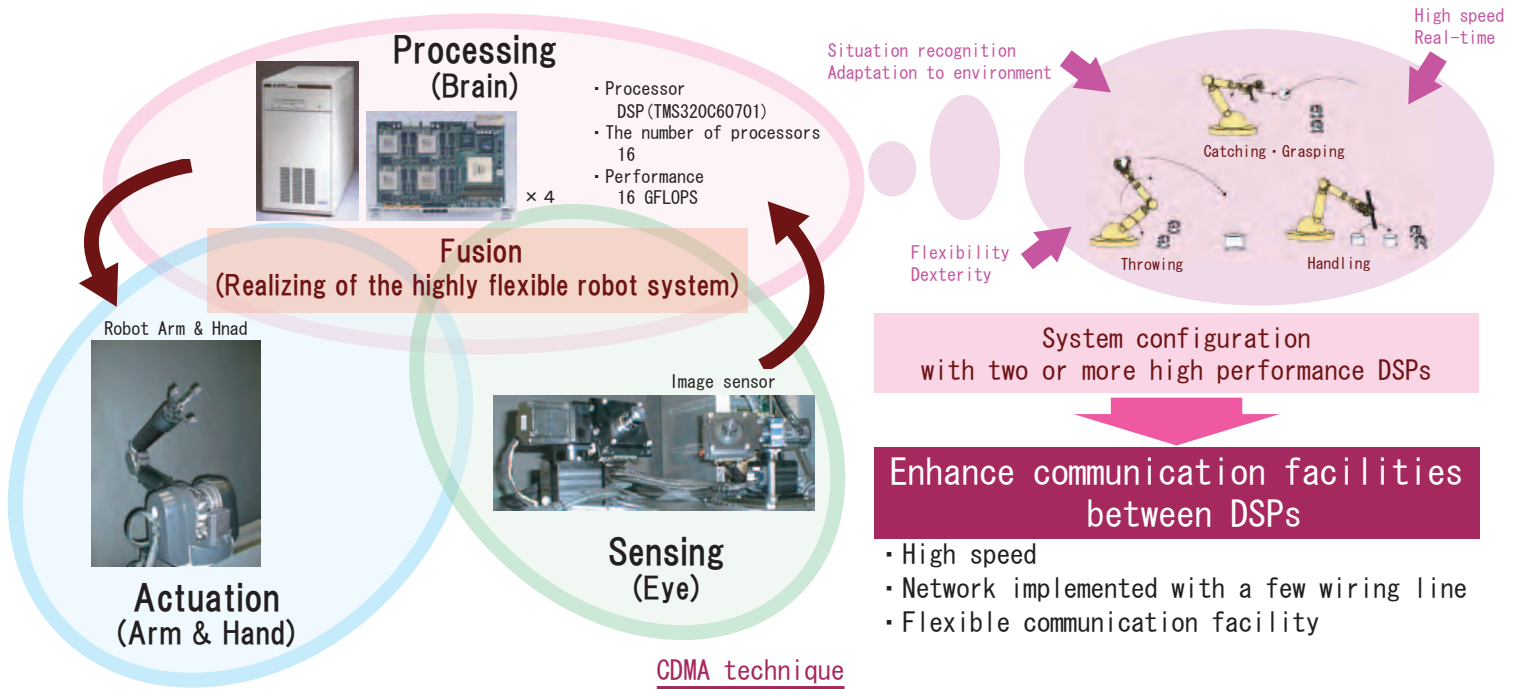


CDMA Communication Chips for Highly Flexible Robot Brain

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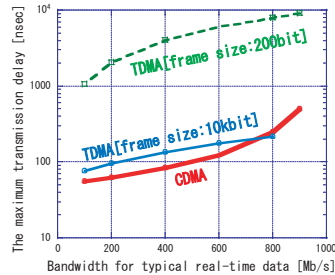
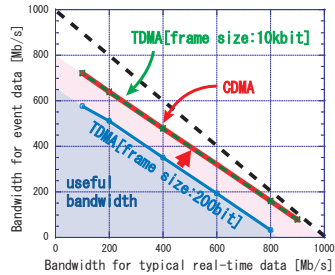


TDMA vs. CDMA

[CDMA] 7 multiplexing [TDMA (1)] Frame size : 200(bit) [TDMA (2)] Frame size : 10k(bit)

[Conditions in comparison]

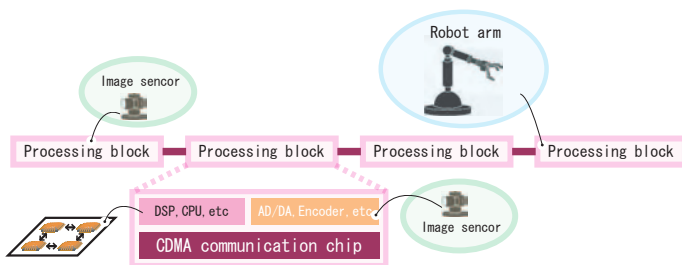
Bit rate	1 Gbps
Size of event data	2 bit
Overhead of event data	8 bit
Overhead of typical real-time data	32 bit



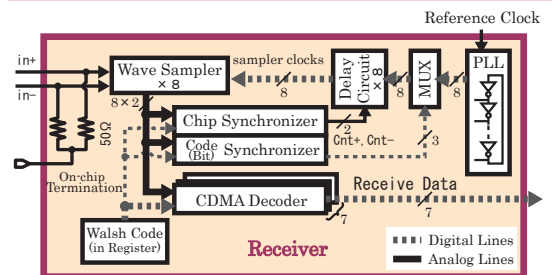
Summary

	Efficiency of bandwidth	Maximum delay time
CDMA	○	○
TDMA (1)	×	○
TDMA (2)	○	×

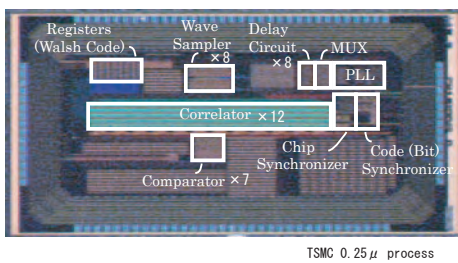
The system configuration of flexible robot



A block diagram of the CDMA receiver chip



Chip micrograph



- [Bit rate] 2Gbps
- [Bit rate/PN code] 250Mbps
- [The number of wiring lines] 2 (differential signal)
- [The number of spread codes] 8 Synchronization : 1 Data : 7
- [Spread code] Walsh code
- [Length of the spread code] 8

Measurement results

