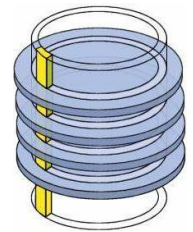


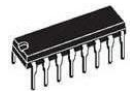
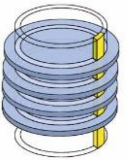
Big Data



External Sort Merge
Exemple pass 1 : MERGE



Pass 0 : 1 block run sorter



Sort



S0

ZE
SA
MD
KA
GE
FF
FD
DC
BE
AC

S1

UE
NH
JA
RG
IG
LC
JC
UH
BG
YH

S2

RB
CA
AE
VC
VF
JE
DG
ZF
TE
TF

S3

IB
XG
ND
AF
EH
ZD
OB
LE
RA
EB

S0

ZE
SA
MD
KA
GE
FF
FD
DC
BE
AC

S1

YH
UH
UE
RG
NH
LC
JC
JA
IG
BG

S2

ZF
VF
VC
TF
TE
RB
JE
DG
CA
AE

S3

ZD
XG
RA
OB
ND
LE
IB
EH
EB
AF

Pass 1 : 2 block run

pass1

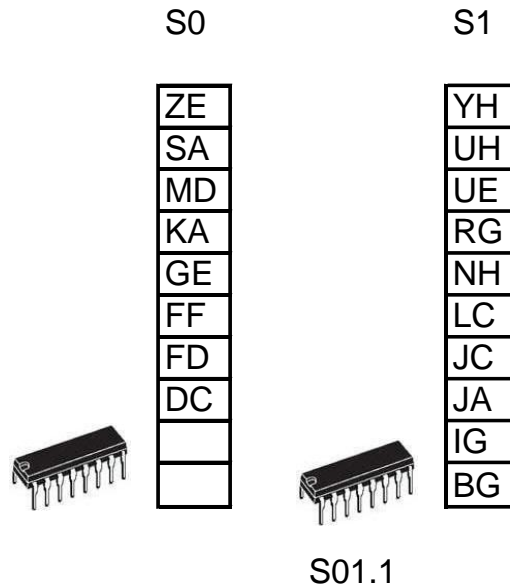


S0	S1
ZE	YH
SA	UH
MD	UE
KA	RG
GE	NH
FF	LC
FD	JC
DC	JA
BE	IG
AC	BG

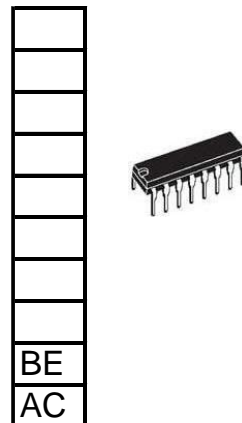
S01.1

Étape S01.1

Pass 1 : 2 block run



Étape S01.1



Pass 1 : 2 block run



S0

S1

ZE
SA
MD
KA

YH
UH
UE
RG
NH
LC



pass0

S01.1

S01

JC
JA
IG
GE
FF
FD
DC
BG
BE
AC



Étape S01.1

pass1

Pass 1 : 2 block run



Étape S01.2

S0

ZE
SA
MD
KA

S1

YH
UH
UE
RG
NH
LC

pass0

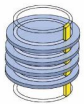
S01.1

JC
JA
IG
GE
FF
FD
DC
BG
BE
AC

S01.2



pass1



Pass 1 : 2 block run



Étape S01.2

S0

ZE
SA
MD

S1

YH
UH
UE

pass0

S01.1

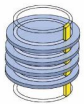
JC
JA
IG
GE
FF
FD
DC
BG
BE
AC

S01.2

RG
NH
MD
LC
KA



pass1



Pass 1 : 2 block run



Étape S01.2

S0

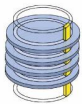
S1

pass0

S01.1

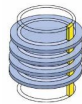
S01.2

pass1



JC
JA
IG
GE
FF
FD
DC
BG
BE
AC

ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA



Pass 1 : 2 block run

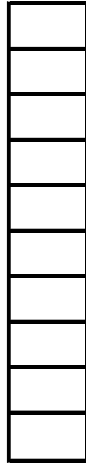


pass0

S01

S0

S1



S01.1

S01.2



JC
JA
IG
GE
FF
FD
DC
BG
BE
AC

ZE
YH
UH
UE
SA
RG
NH
MD
LC
KA



pass1

2 blocks runs index (0..19)



Run 01

S01.1

S01.2

9	JC	19	ZE
8	JA	18	YH
7	IG	17	UH
6	GE	16	UE
5	FF	15	SA
4	FD	14	RG
3	DC	13	NH
2	BG	12	MD
1	BE	11	LC
0	AC	10	KA

run01

pass1

Pass 1 : 2 block run



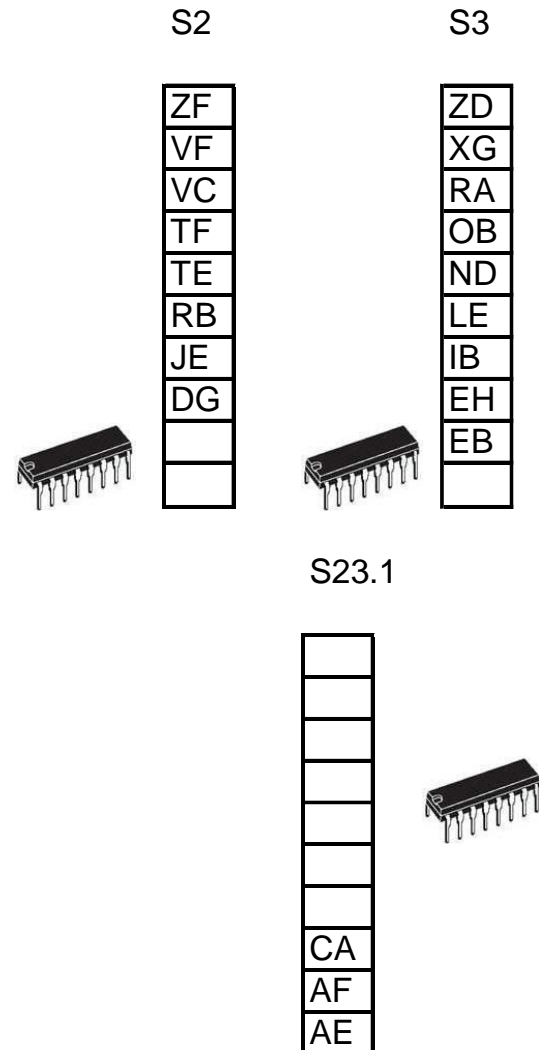
S2	
ZF	
VF	
VC	
TF	
TE	
RB	
JE	
DG	
CA	
AE	

S3	
ZD	
XG	
RA	
OB	
ND	
LE	
IB	
EH	
EB	
AF	

S23.1

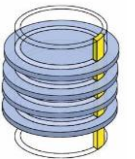
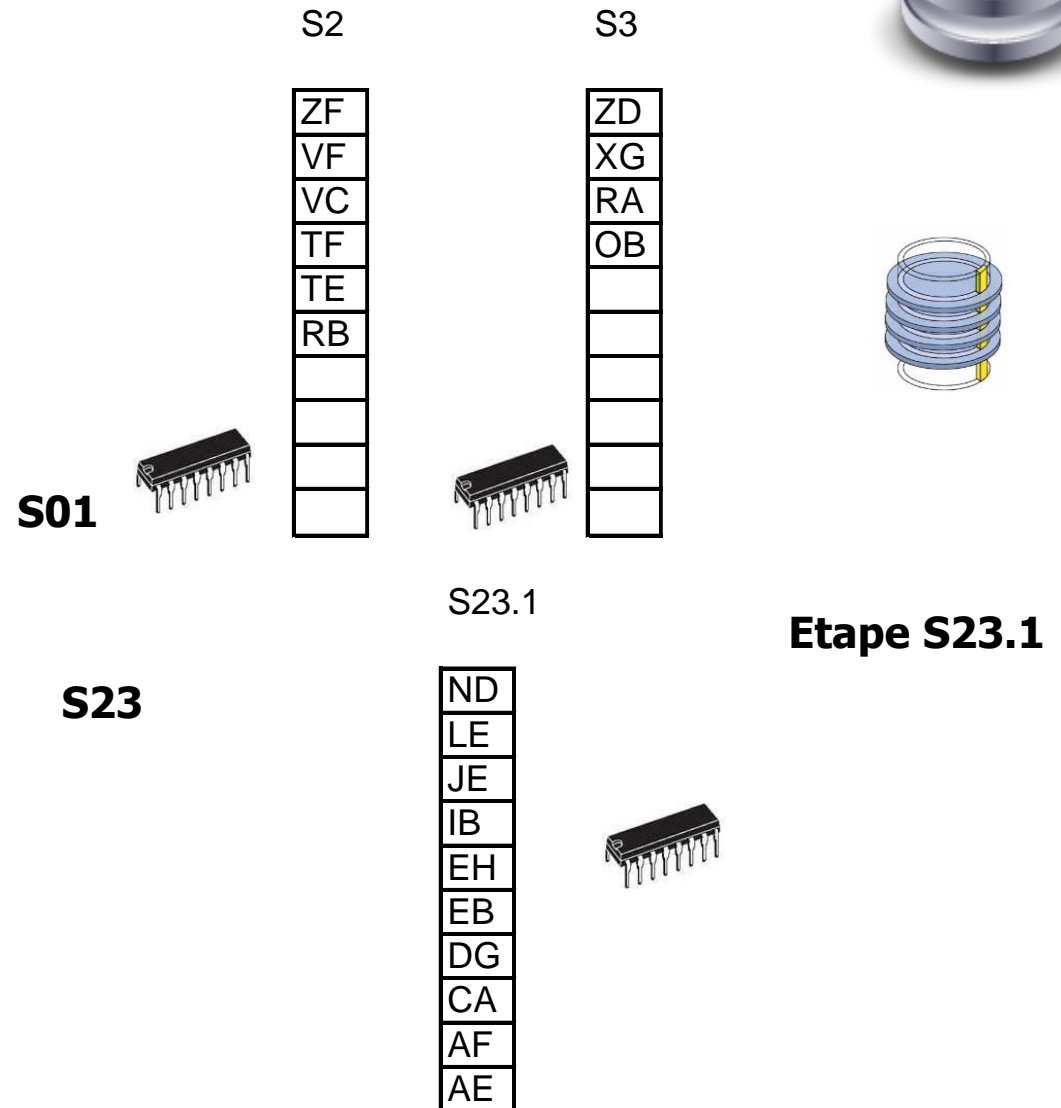
Etape S23.1

Pass 1 : 2 block run



Etape S23.1

Pass 1 : 2 block run



Pass 1 : 2 block run

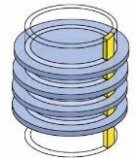


S2

ZF
VF
VC
TF
TE
RB

S3

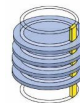
ZD
XG
RA
OB



S23.1

ND
LE
JE
IB
EH
EB
DG
CA
AF
AE

S23.2



Etape S23.1

Pass 1 : 2 block run

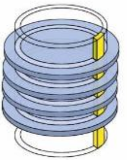


S2

ZF
VF

S3

ZD
XG

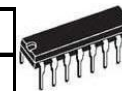


S23.1

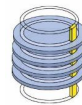
ND
LE
JE
IB
EH
EB
DG
CA
AF
AE

S23.2

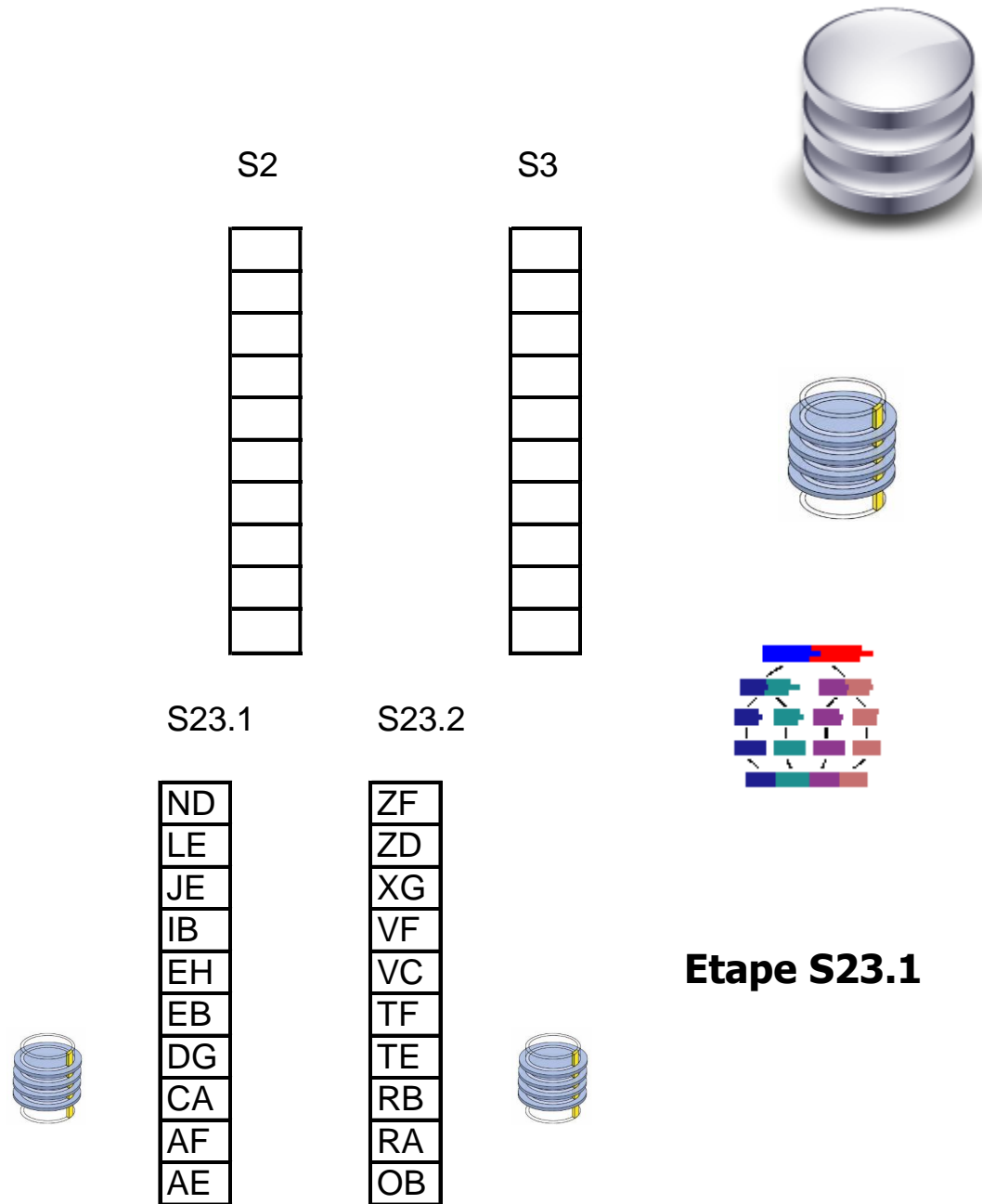
VC
TF
TE
RB
RA
OB



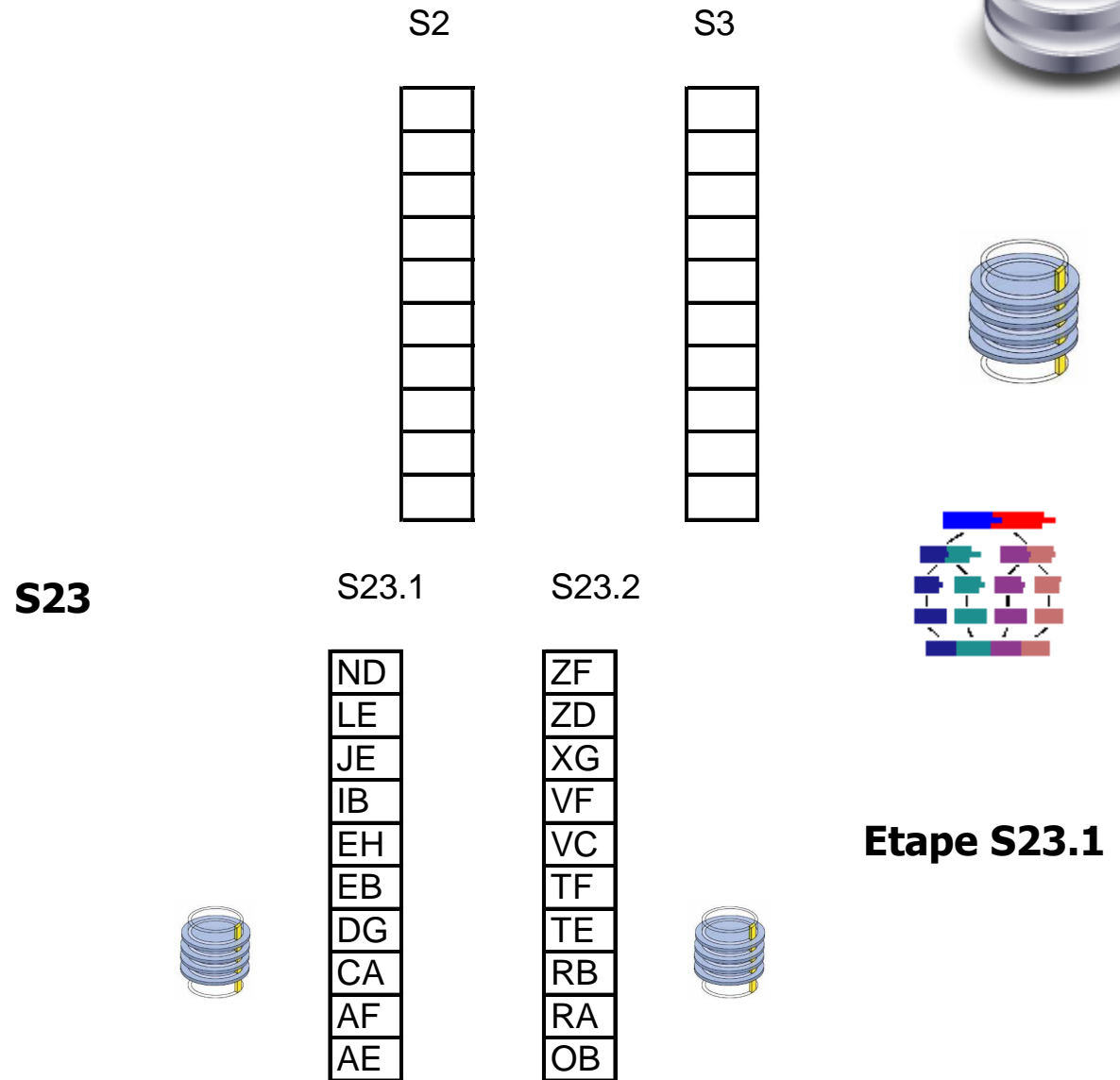
Etape S23.2



Pass 1 : 2 block run



Pass 1 : 2 block run



2 blocks runs index (0..19)



Run 01

S01.1

S01.2

9	JC	19	ZE
8	JA	18	YH
7	IG	17	UH
6	GE	16	UE
5	FF	15	SA
4	FD	14	RG
3	DC	13	NH
2	BG	12	MD
1	BE	11	LC
0	AC	10	KA

S01

Run 02

S23.1

S23.2

9	ND	19	ZF
8	LE	18	ZD
7	JE	17	XG
6	IB	16	VF
5	EH	15	VC
4	EB	14	TF
3	DG	13	TE
2	CA	12	RB
1	AF	11	RA
0	AE	10	OB

S23

2 blocks runs index (0..19)

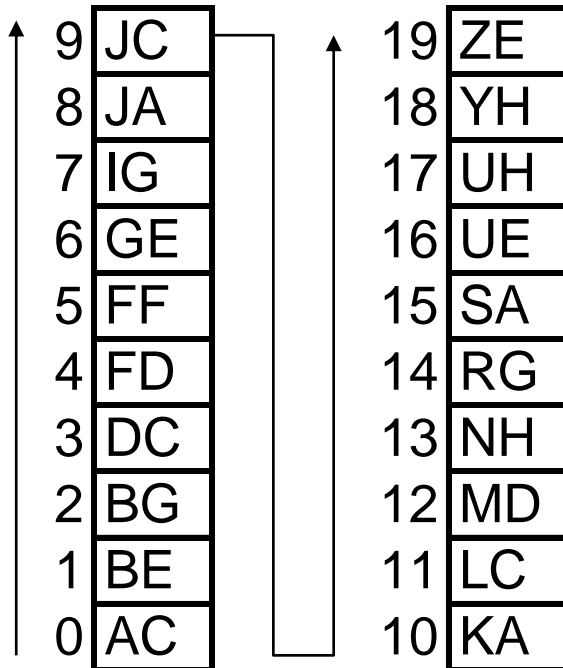
pass1



Run 01

S01.1

S01.2

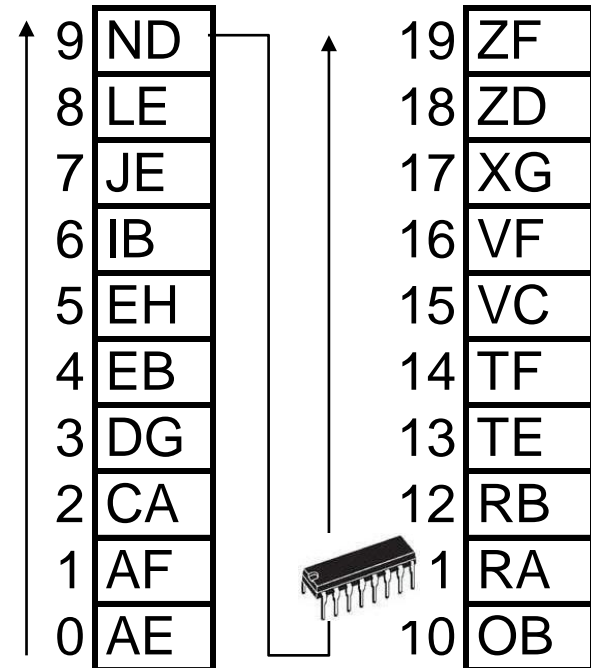


run01

Run 02

S23.1

S23.2

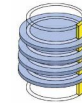
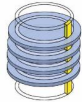


run02

2 blocks runs index (0..19)



Index runs



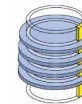
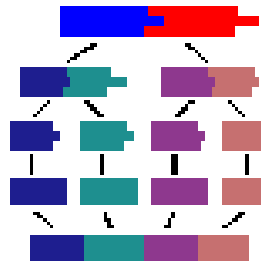
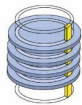
	0	1	2	3	4	5	6	7	8	9
S01.1	AC	BE	BG	DC	FD	FF	GE	IG	JA	JC

	10	11	12	13	14	15	16	17	18	19
S01.2	KA	LC	MD	NH	RG	SA	UE	UH	YH	ZE



	0	1	2	3	4	5	6	7	8	9
S23.1	AE	AF	CA	DG	EB	EH	IB	JE	LE	ND

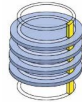
	10	11	12	13	14	15	16	17	18	19
S23.2	OB	RA	RB	TE	TF	VC	VF	XG	ZD	ZF



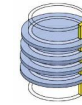
2 blocks runs index (0..19)



Index runs



S01



	0	1	2	3	4	5	6	7	8	9
S01.1	AC	BE	BG	DC	FD	FF	GE	IG	JA	JC

	10	11	12	13	14	15	16	17	18	19
S01.2	KA	LC	MD	NH	RG	SA	UE	UH	YH	ZE



	0	1	2	3	4	5	6	7	8	9
S23.1	AE	AF	CA	DG	EB	EH	IB	JE	LE	ND

	10	11	12	13	14	15	16	17	18	19
S23.2	OB	RA	RB	TE	TF	VC	VF	XG	ZD	ZF

S23

