CHECKSUM1

MAG\_VAR

DATE

TRACK

SPEED

LONG\_DEG

Non-alpha, ‘L’, n>5

Any number

‘$’

n==5 && comma

n>=6 && comma

Any char

TALKER + SENTENCE\_TYPE

LAT\_DEG

STATUS

Alpha char, n==10

‘A’ or ‘,’

NOT ‘A’ or ‘,’, n>1

‘N’,’S’, ‘,’

Any number,’,’, or ‘.’

n==1 && ‘,’

Any number

n==2

n>=2 && ‘,’

Non-number, n==3

‘E’,’W’, ‘,’

LAT\_MIN

LAT\_DIR

n==2

n==1 && ‘,’

Non-number, n==9

Any non-number, n==4

n==3 && ‘,’

n>=2 && ‘,’

LONG\_DIR

Non-number, n==9

LONG\_MIN

**Finite State Machine for NMEA\_Decode Task.**

**John Holmes / ECE561**

Always return to start. Task is run only if n==2 && we receive \n\r && the checksum is correct

Any char

n==2

Any number,’,’, or ‘.’

n==1 && ‘,’

Anything besides \*

‘\*’

Anything besides E OR W

n==1 && ‘,’ &&’E’ OR ‘W’

Any non-number

n>=1 && ‘,’

MAG\_DIR

Any non-number

n>=6 && ‘,’

n>=1 && ‘,’

Any non-number,n==10

n>=1 && ‘,’

Any non-number,n==10

CHECKSUM2