```
FUNCTION_BLOCK DataLoggingEvent
VAR
      bBufferFinish : BOOL;
      bXMLFinish : BOOL;
      write_to_Buffer : write_to_Buffer;
      write_to_XML : write_to_XML_Event;
      XMLFileName : T_MaxString;
      Buffer1 : ARRAY[1..20] OF Datensatz;
      Buffer2 : ARRAY[1..20] OF Datensatz;
      m: INT :=1;
      i: INT :=22;
      StopRecordStart: BOOL := TRUE;
      DownTrigDetect: F_TRIG;
      WriteTimeDiff: ST_TimeDiff;
      Name: T_MaxString;
      bExecute: BOOL := FALSE;
      event: BOOL;
      timeinname : STRING;
      TimestampSYS : TIMESTRUCT;
      UpTrigDetect: R_trig;
END_VAR



//start the function to get the needed to be recorded values
write_to_Buffer(TimestampSYS=>TimestampSYS,m := m,startrecord :=
TRUE);
Buffer1[m]:= write_to_Buffer.Datensatz;

//when events trigger is detected, record the 20 values before
event trigger
UpTrigDetect(CLK:=event);
IF UpTrigDetect.Q THEN
      Buffer2 :=Buffer1;
      bBufferFinish :=TRUE;
      timeinname :=
CONCAT(CONCAT(WORD_TO_STRING(TimestampSYS.wYear),'-'),CONCAT(CONC
AT(WORD_TO_STRING(TimestampSYS.wMonth),'-'),CONCAT(CONCAT(WORD_TO
_STRING(TimestampSYS.wDay),'-'),CONCAT(CONCAT(WORD_TO_STRING(Time
stampSYS.wHour),'-'),CONCAT(CONCAT(WORD_TO_STRING(TimestampSYS.wM
inute),'-'),CONCAT(CONCAT(WORD_TO_STRING(TimestampSYS.wSecond),'-
'),WORD_TO_STRING(TimestampSYS.wMilliseconds)))))));
      i := 0;
END_IF

//record the 20 values after event trigger
IF i = 20 THEN
      Buffer2:=Buffer1;
      bBufferFinish :=TRUE;
      timeinname :=
CONCAT(CONCAT(WORD_TO_STRING(TimestampSYS.wYear),'-'),CONCAT(CONC
AT(WORD_TO_STRING(TimestampSYS.wMonth),'-'),CONCAT(CONCAT(WORD_TO
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_STRING(TimestampSYS.wDay),'-'),CONCAT(CONCAT(WORD_TO_STRING(Time
stampSYS.wHour),'-'),CONCAT(CONCAT(WORD_TO_STRING(TimestampSYS.wM
inute),'-'),CONCAT(CONCAT(WORD_TO_STRING(TimestampSYS.wSecond),'-
'),WORD_TO_STRING(TimestampSYS.wMilliseconds)))))));
END_IF
i := i+1;

//reset counter in case it overflows
IF i = 100 THEN
     i := 22;
END_IF

//overwrite buffer from the first value when buffer is full
IF m = 20 THEN
     m:=0;
END_IF

m :=m+1;

//give name to xml files
Name:=CONCAT(CONCAT('C:\temp_Yizhen\',timeinname),'TEST.xml');
XMLFileName := Name;
//XMLFileName := 'C:\temp_Yizhen\Test.xml';

//write data from buffer to xml file
write_to_XML(WriteFinishFlag => bXMLFinish,sFilePath :=
XMLFileName,LogInput := Buffer2,bExecute := bExecute);

//reset write to xml function
IF bBufferFinish THEN
     bExecute := TRUE;
END_IF

IF bXMLFinish THEN
     bExecute := FALSE;
     bBufferFinish :=FALSE;
     bXMLFinish := FALSE;
END_IF
```