

```

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39 *
40 */
41
42 /**
43 *  @file    runtime_stats_light.h
44 *  @author  foxBMS Team
45 *  @date    18.03.2019 (date of creation)
46 *  @ingroup ENGINE
47 *  @prefix  DIAG
48 *
49 *  @brief   Diagnosis for task runtime
50 *
51 *  This module is an alternative to the FreeRTOS runtime stats
52 *  with a limited feature set.

```

```

53     */
54
55     #ifndef RUNTIME_STATS_LIGHT_H_
56     #define RUNTIME_STATS_LIGHT_H_
57
58     /*===== Includes =====*/
59     #include "general.h"
60
61     /*===== Macros and Definitions =====*/
62
63     #ifndef BUILD_DIAG_ENABLE_TASK_STATISTICS
64     /**
65      * @brief Enable task statistics
66      *
67      * If this define is set to 1, task statistics will be computed
68      * during runtime with diag_calc_runtime_stats().
69      */
70     #define BUILD_DIAG_ENABLE_TASK_STATISTICS 0
71     #endif /* BUILD_DIAG_ENABLE_TASK_STATISTICS */
72
73     /*===== Constant and Variable Definitions =====*/
74
75     /**
76      * @brief Struct for task metrics
77      *
78      * This struct stores the metrics for a task and should be passed as a
79      * pointer to diag_calc_runtime_stats().
80      */
81     typedef struct TASK_METRICS {
82         uint32_t call_period;      /*!< time since the last call in ms */
83         int32_t jitter;           /*!< jitter in reference to the expected call period in ms */
84         uint32_t lastCalltime;    /*!< timestamp of the last call in ms */
85         int32_t wait_ticks;       /*!< number of ticks that have been spent waiting */
86     } TASK_METRICS_s;
87
88     /*===== Function Prototypes =====*/
89     /**
90      * @brief Update the runtime stats.
91      *
92      * This function updates a tracking struct for the call period and jitter
93      * of task-calls.
94      *
95      * @param task_metric pointer static variable that stores the metric per task
96      * @param expected_call_period time in ms that should be between each call
97      * @param tick_entry_into_wait time at which the wait-function has been entered
98      */
99     extern void diag_calc_runtime_stats(TASK_METRICS_s *task_metric, uint32_t expected_call_period, uint32_t
100     tick_entry_into_wait);
101
102     /*===== Function Implementations =====*/
103     #endif /* RUNTIME_STATS_LIGHT_H_ */

```