

# TFM CONFIGURATION PROPOSAL

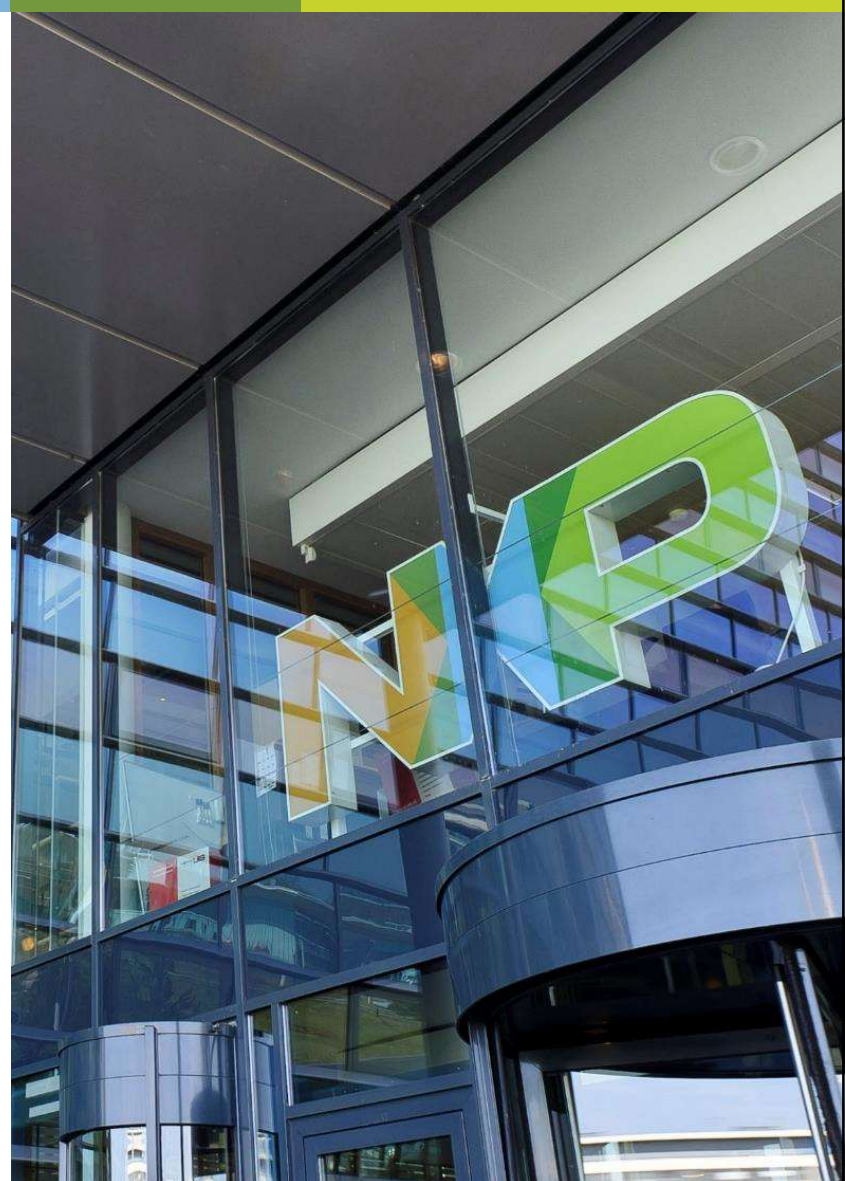
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SECURE CONNECTIONS  
FOR A SMARTER WORLD

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## TFM CONFIGURATION - CURRENT STATE

```
14
15 #ifndef PROJECT_CONFIG_HEADER_FILE
16 #include PROJECT_CONFIG_HEADER_FILE
17 #endif
18
19 /*
20  * Platform defined header file for TF-M configs.
21  * Path: ${TARGET_PLATFORM_PATH}/config_tfm_target.h
22  */
23 #ifndef TARGET_CONFIG_HEADER_FILE
24 #include TARGET_CONFIG_HEADER_FILE
25 #endif
```

```
7
8 #ifndef __CONFIG_PROFILE_LARGE_H__
9 #define __CONFIG_PROFILE_LARGE_H__
10
11 /* Platform Partition Configs */
12
13 /* Size of input buffer in platform service */
14 #define PLATFORM_SERVICE_INPUT_BUFFER_SIZE 64
15
16 /* Size of output buffer in platform service */
17 #define PLATFORM_SERVICE_OUTPUT_BUFFER_SIZE 64
18
19 /* The stack size of the Platform Secure Partition */
20 #define PLATFORM_SP_STACK_SIZE 0x500
21
22 /* Disable Non-volatile counter module */
23 #define PLATFORM_NV_COUNTER_MODULE_DISABLED 0
24
```

```
9 #ifndef CONFIG_TFM_TARGET_H
10 #define CONFIG_TFM_TARGET_H
11
12 /* Using of stored NV seed to provide entropy is disabled, when CRYPTO_HW_ACCELERATOR
13 #ifndef CRYPTO_HW_ACCELERATOR
14 #undef CRYPTO_NV_SEED
15 #define CRYPTO_NV_SEED 0
16 #endif
17
18 /* The maximum asset size to be stored in the Protected Storage area. */
19 #undef PS_MAX_ASSET_SIZE
20 #define PS_MAX_ASSET_SIZE 512
21
22 /* The maximum number of assets to be stored in the Protected Storage area. */
23 #undef PS_NUM_ASSETS
24 #define PS_NUM_ASSETS 5
25
26 /* The maximum number of assets to be stored in the Internal Trusted Storage */
27 #undef ITS_NUM_ASSETS
28 #define ITS_NUM_ASSETS 5
29
30
```

- TFM configuration defined by *config\_tfm.h*, which includes:
  - PROJECT\_CONFIG\_HEADER\_FILE:
    - *config/profile/config\_profile\_<type>.h*
  - TARGET\_CONFIG\_HEADER\_FILE:
    - *platform/ext/target/<vendor>/<board>/config\_tfm\_target.h*
- Issues:
  - There is no a clear possibility to change default parameters:
    - No possibility to change parameters which are already defined in PROJECT\_CONFIG\_HEADER\_FILE via project definitions or cmake.
    - PROJECT\_CONFIG\_HEADER\_FILE has a higher priority than TARGET\_CONFIG\_HEADER\_FILE.
    - Possible workaround, to change the default configuration:
      - use **#undef** in TARGET\_CONFIG\_HEADER\_FILE
      - define new **PROJECT\_CONFIG\_HEADER\_FILE**
  - PSA API Test application does not use standard TFM profile configurations. Instead, it has own configuration **config\_test\_psa\_api.h**

# TFM CONFIGURATION - PROPOSAL

```

8  #ifndef __CONFIG_TFM_H__
9  #define __CONFIG_TFM_H__
10
11 #ifdef __cplusplus
12 extern "C" {
13 #endif
14
15 /*
16  * Platform defined header file for TF-M configs.
17  * Path: ${TARGET_PLATFORM_PATH}/config_tfm_target.h
18  */
19 #ifndef TARGET_CONFIG_HEADER_FILE
20 #include TARGET_CONFIG_HEADER_FILE
21 #endif
22
23 #ifndef PROJECT_CONFIG_HEADER_FILE
24 #include PROJECT_CONFIG_HEADER_FILE
25 #endif

```

```

8  #ifndef __CONFIG_PROFILE_LARGE_H__
9  #define __CONFIG_PROFILE_LARGE_H__
10
11 /* Platform Partition Configs */
12
13 /* Size of input buffer in platform service */
14 #ifndef PLATFORM_SERVICE_INPUT_BUFFER_SIZE
15 #define PLATFORM_SERVICE_INPUT_BUFFER_SIZE 64
16 #endif
17
18 /* Size of output buffer in platform service */
19 #ifndef PLATFORM_SERVICE_OUTPUT_BUFFER_SIZE
20 #define PLATFORM_SERVICE_OUTPUT_BUFFER_SIZE 64
21 #endif
22

```

- All default configuration parameters should be covered by `#ifndef`.
- **Change configuration priority**
  - **From:**
    1. PROJECT\_CONFIG\_HEADER\_FILE: `config/profile/config_profile_<type>.h`
    2. TARGET\_CONFIG\_HEADER\_FILE: `platform/ext/target/<vendor>/<board>/config_tfm_target.h`
    3. ~~Project global definitions~~
  - **To:**
    1. Project global definitions
    2. TARGET\_CONFIG\_HEADER\_FILE: `platform/ext/target/<vendor>/<board>/config_tfm_target.h`
    3. PROJECT\_CONFIG\_HEADER\_FILE: `config/profile/config_profile_<type>.h`
- PSA API Test application should use a standard TFM profile configuration instead own one.
- Other improvements:
  - Use a common prefix `TFM_CFG_<parameter_name>` for configuration parameters.
  - All standard definitions should be predefined to a default values.

For example, to change :

From:

```
#ifdef OTP_NV_COUNTERS_RAM_EMULATION
```

To:

```

#ifndef TFM_CFG_OTP_NV_COUNTERS_RAM_EMULATION
#define TFM_CFG_OTP_NV_COUNTERS_RAM_EMULATION 0
#endif
...
#if TFM_CFG_OTP_NV_COUNTERS_RAM_EMULATION
...

```

# Q&A