

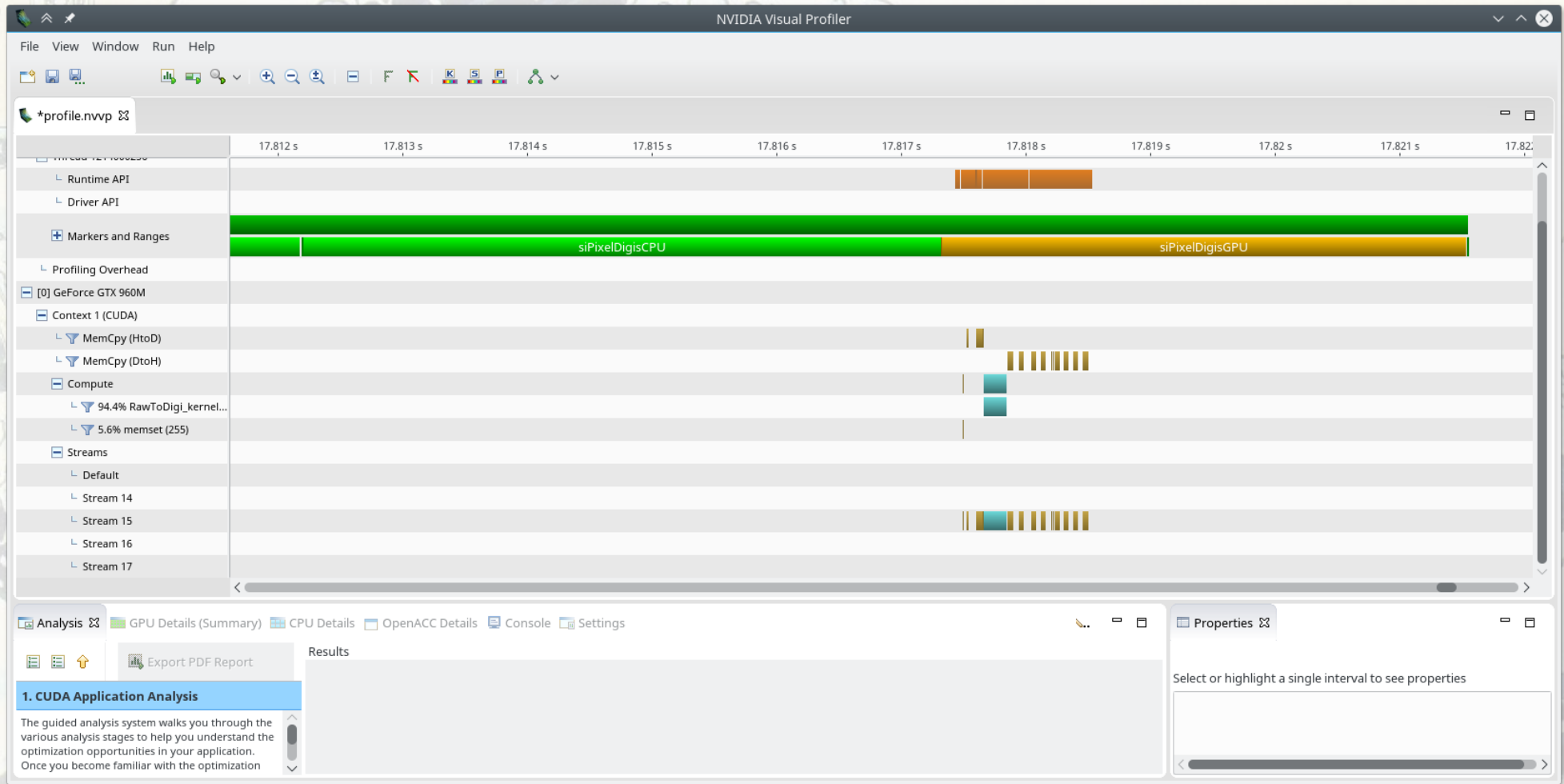
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pixel raw to digi on GPUs

problem solved

- integrate nvprof / nvvp with the CMS framework
 - **NVProfilerService** (not yet on github)



- most of the time is spent on the CPU after calling the kernel

next problem(s)

- optimise the post-processing on the CPU

```
for (auto i = 0; i < numberOfPixels; i++) {  
    if (rawIdArr_h[i] != 9999) {           // to revise  
        detDigi = &(*collection).find_or_insert(rawIdArr_h[i]);  
        if ((*detDigi).empty())  
            (*detDigi).data.reserve(32);    // avoid the first relocations  
        (*detDigi).data.emplace_back(xx_h[i], yy_h[i], adc_h[i]);  
        theDigiCounter++;  
    }  
}
```


next problem(s)

- **NVProfilerService** / nvvp are not “stream” friendly
 - thread-oriented rather than task-oriented
 - feature request to NVIDIA ?
- integrate with the work of Matti and Salvatore
- investigate a more C++ friendly interface to CUDA:
 - Thin C++-flavored wrappers for the CUDA Runtime API
 - <https://github.com/eyalroz/cuda-api-wrappers>