Compact

WP2: Planning for the CDR

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- Contents

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What is the purpose of a Conceptual Design Report?

- To state the project goals
- To justify and present a self-consistent description of the design choices made for each component of the facility
- To make a convincing case that
  - the facility design will meet the required output specification
  - the feasibility and risk of the design choices is well understood
  - remaining technical challenges are identified with a clear R&D path to overcoming them
- To provide a cost estimate

What a Conceptual Design Report is _not_:

- A detailed technical description of each system and subsystem.

CDR Proposed Contents

1. Executive Summary - *WP1/WP2*
2. Introduction - *WP1/WP2*
3. Science goals and photon output requirements - *WP2*
4. Systems design and performance
    1. Facility Layout - *WP2/WP6*
    2. Electron injector - *WP3*
    3. RF systems - *WP4*
    4. Undulators - *WP5*
    5. Accelerator lattice design and FEL performance - *WP6*
    6. Photon beamlines and user facilities - *?*
    7. Building and site considerations - *?*
5. Strategic issues - *WP7*
    1. Global integration
    2. Cost estimates
    3. Technology transfer
6. Appendices - *WP1*
    1. Institutes contributing to the project
    2. CompactLight publications/presentations
    3. ??

CDR Production

- We intend to compile the CDR in Latex, rather than Word, because we think
  - the finished product will look more professional
  - it is easier to combine contributions from different authors
  - the style can be easily changed – it doesn't have to look like a standard scientific paper
  - citations and cross-section or cross-chapter references will just work
  - we can have a single BibTex file for all references.
- We propose a collaborative online Latex workspace called Overleaf
  - multiple collaborators can work on document simultaneously
  - document history, Dropbox and GitHub sync
  - no local Latex installation required
  - cost is £144/yr for up to 10 collaborators, or £288/yr for unlimited collaborators
  - see https://www.overleaf.com/
- *Please therefore, if at all possible, use Latex for any CompactLight reports to enable easy transfer of required content to the CDR.*
- If any authors are unable/unwilling to use Latex, please provide your content as **plain text**, with placeholder captions for all images, which should be supplied as clearly labelled **separate files** in .eps or .png format.
- Vector-based graphics files are strongly preferred to bitmap formats as they reproduce at full resolution irrespective of scaling.

CDR Production

- WP2 will combine the contributions from the different WPs into the final document and edit the text to create a uniform style across all sections
- To help obtain a uniform style, we propose the following guidelines
    - We write about the CompactLight <u>finished design</u> in the present tense and in the third person. For example,
        - ***we do say*** "the undulators for the hard X-ray beamline are superconducting helical devices with a 2mm aperture and a 4mm period"
        - ***we don't say*** "we decide that the undulators will be…."
    - However, in discussing the process that led to the final design, we use the past tense and the third person. For example,
        - ***we do say*** "a number of different technology options were evaluated"
        - ***we don't say*** "we consider a number of technology options"
    - The idea is that this helps distinguish between the ***process*** of designing CompactLight and the final ***result*** and by presenting the finished design in the present tense it makes it seem 'more real'

> **Process = past tense**
> **Result = present tense**
> **Always third person**

Examples of other FEL Facility CDRs

- STFC CDRs
  - 4GLS
  - NLS
  - CLARA (*compiled in Latex*)
- Other CDRs
  - LCLS
  - Fermi@Elettra
  - SwissFEL

pdfs of all the above available on the WP2 Collaborative Workspace:
https://espace.cern.ch/compactlight/WP2/

Questions and Feedback

- EU requirements: is there any information or content that we are obliged to include in the CDR?

- Do we want some printed copies or is pdf OK?

Please use the WP2 Collaboration Workspace Discussion Board topic "CDR Comments and Queries" for any queries etc, or if you want a quick response email me:

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