

Use of Bibliometrics by Observatories

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Bibliometrics

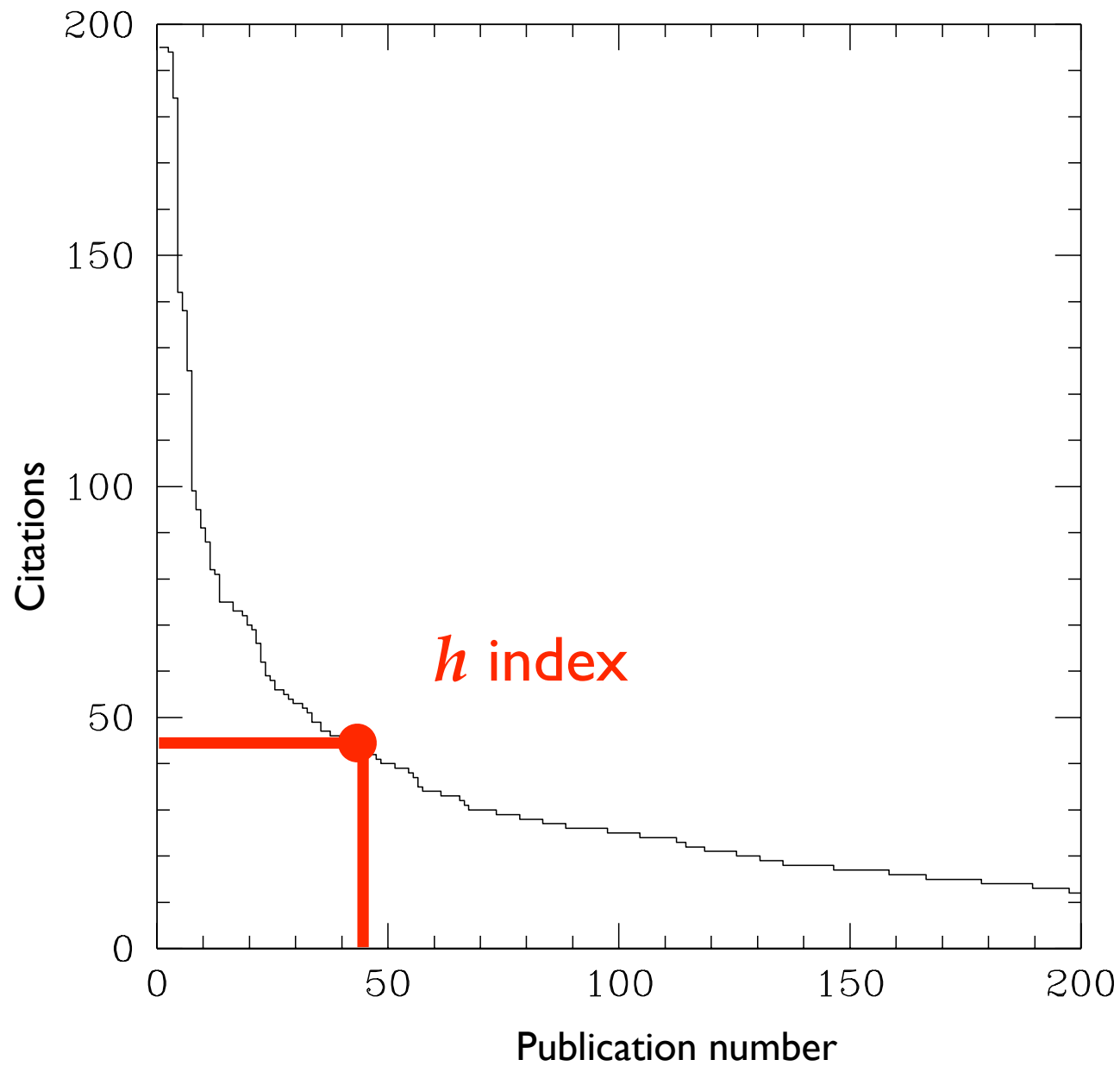
- Telescope statistics:
Publications, citations, bibliometric analyses
- Scientific impact of telescopes
- Funding authorities
- Comparison with other facilities

Common Methods of Evaluation

	Good	Bad
# Publications	productivity	no impact
# Citations	impact	can be inflated
“High-Impact Papers”	balanced	difficult to find

New measure: *h* index

- Jorge E. Hirsch, UC San Diego
Proc. Nat. Acad. Sci. vol. 102, 16569 (2005)
- Index *h*: *h* papers with at least *h* citations



Common Methods of Evaluation

	Good	Bad
# Publications	productivity	no impact
# Citations	impact	can be inflated
“High-Impact Papers”	balanced	difficult to find
<i>h</i> index	productivity + impact	determined by years of operation

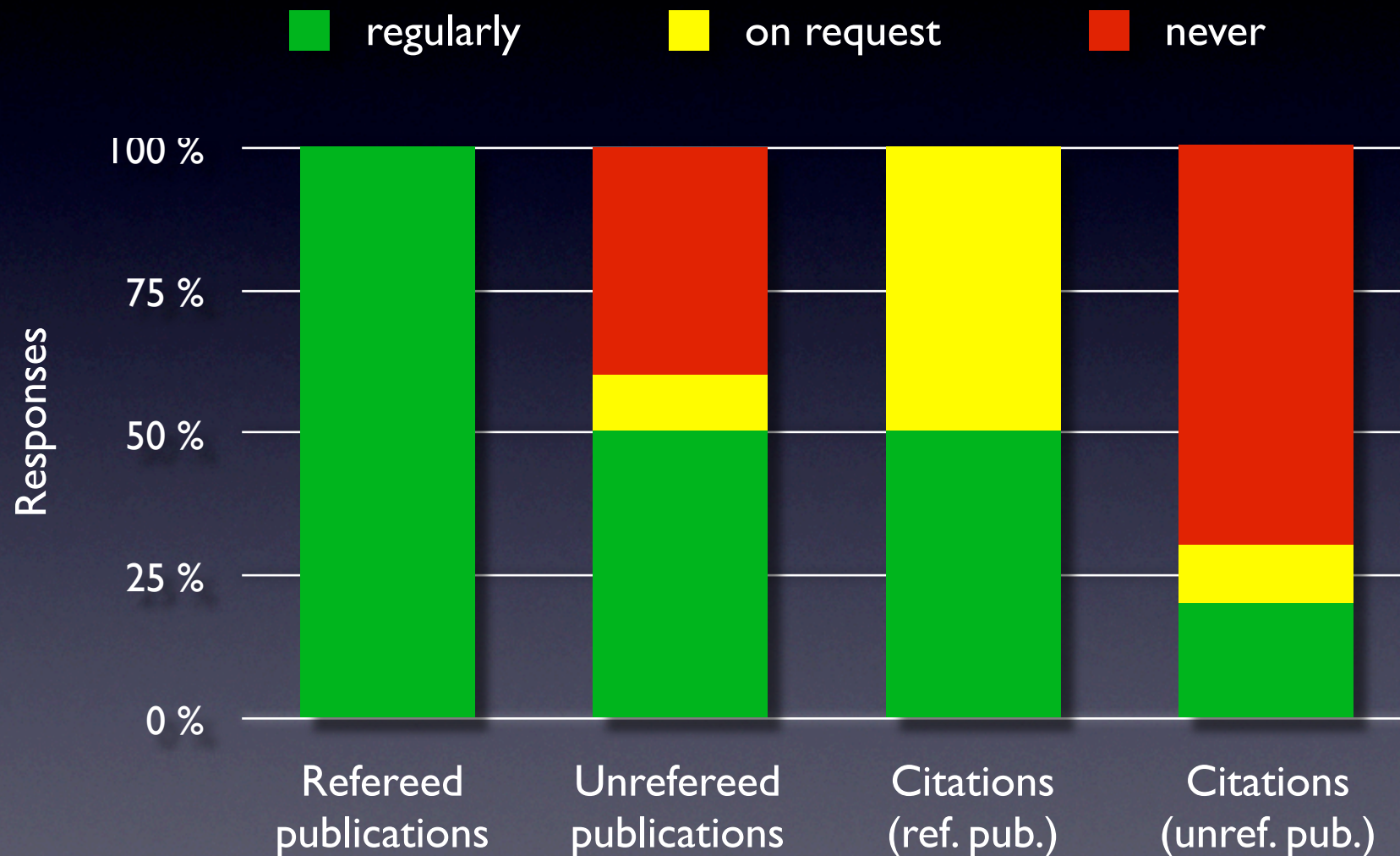
Telescope Statistics Questionnaire

- <http://www.eso.org/libraries/telstats-questionnaire.html>
- Results:
 - CFHT, Gemini, ING, Keck, NRAO, Subaru, (ESO)
 - Chandra, HST, XMM Newton

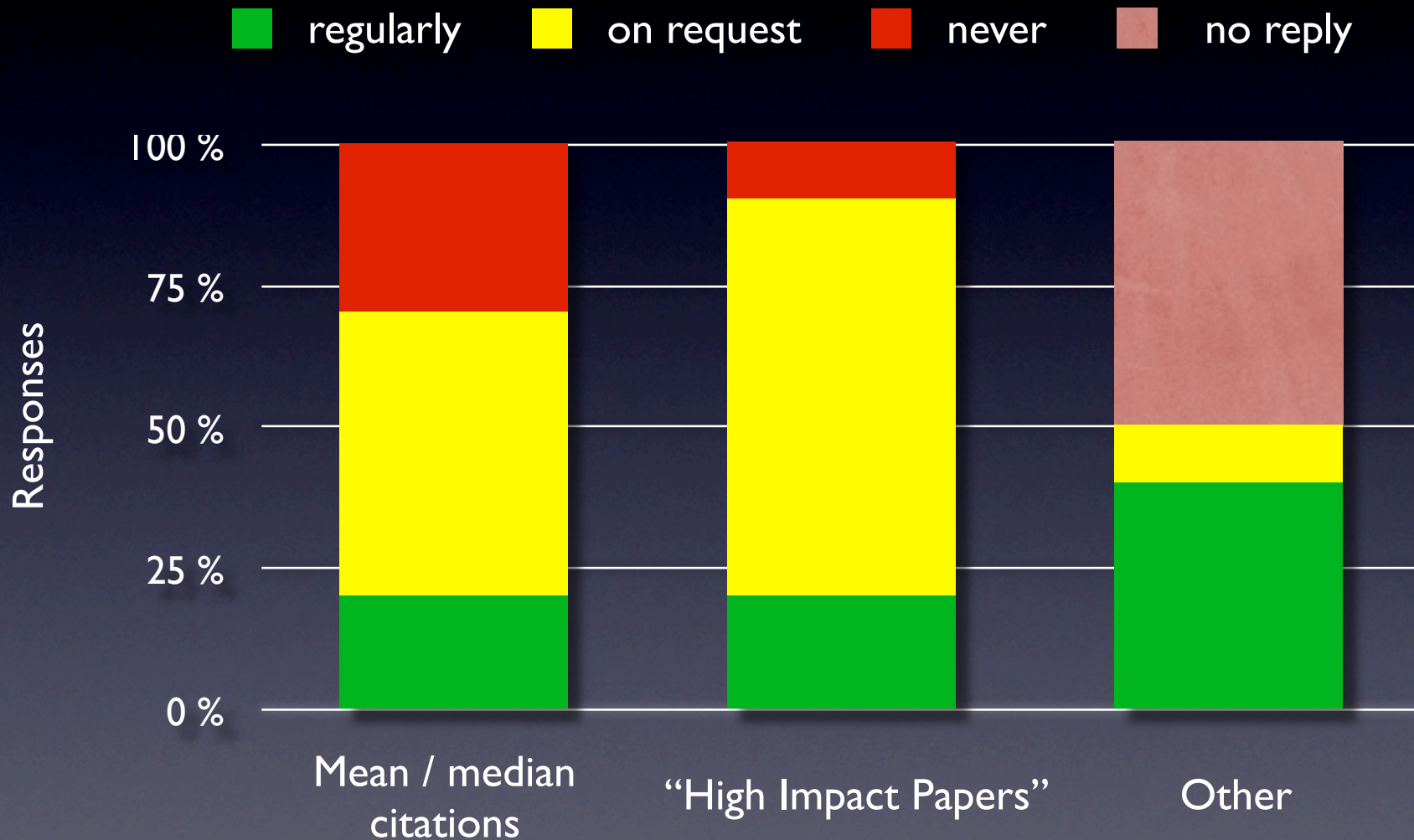
Who compiles the bibliography and derives statistics?

Librarians (occasional help from astronomers)	ESO, Gemini, NRAO
Data archive specialists	Chandra
Team of librarians, secretary, astronomers	CFHT, HST, ING, Keck, Subaru, XMM

Which Statistics? How often?



Mean/median Cites – “HIP” – Others



Which other Statistics?

Average	Publications / citations per... instrument, program type, cycle, orbit etc.
Ranking	Most productive... instrument, program, individual author etc.
“HIP”	across observatories: STScI
<i>h</i> index	internally: ESO across observatories: ESO+STScI (LISA proc.)

Comparisons with other Observatories?

- **Beware!**

Telescope statistics are **NEVER** totally comparable

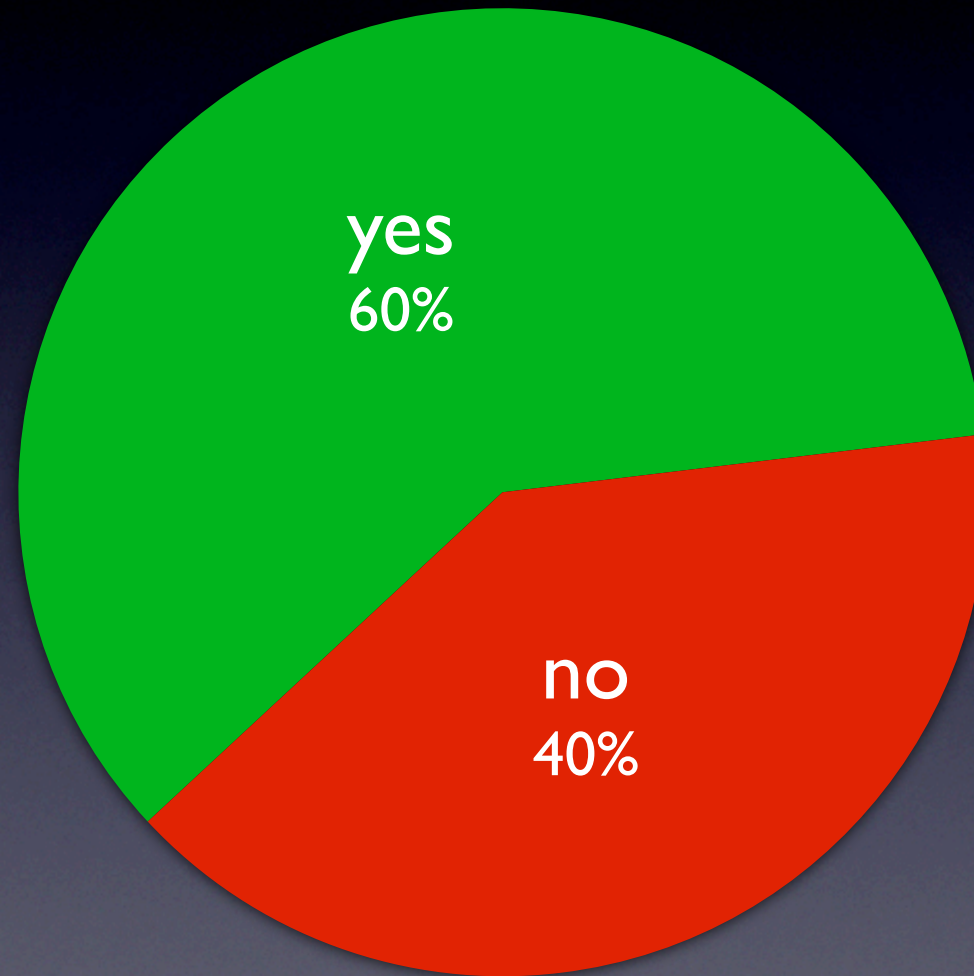
Procedures

- **criteria** for paper selection not uniform
- **methodologies** for building telescope bibliographies vary

Telescopes

- **ground-based / space-based** observatories
- different **apertures**, different **wavelengths**

Comparisons with other Observatories?



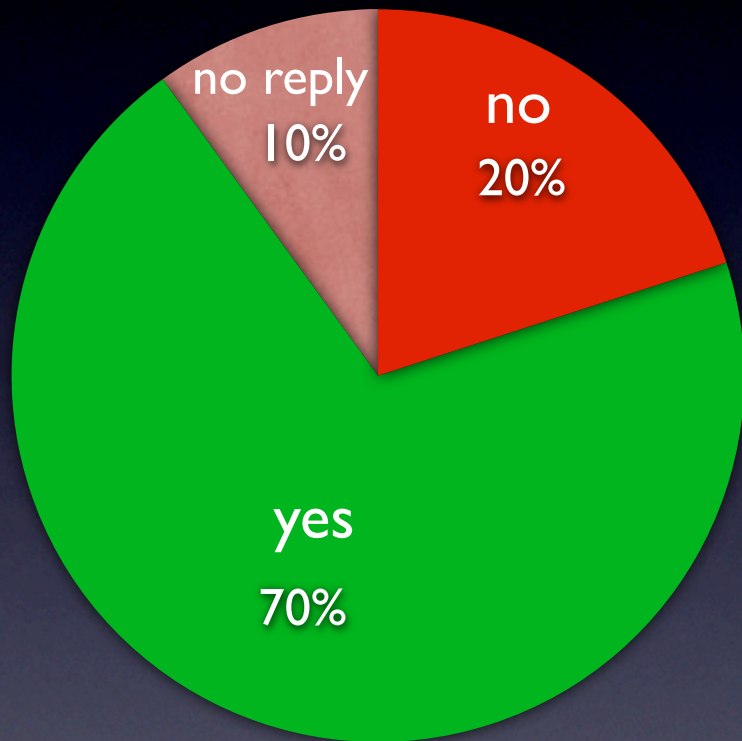
Facility/data set identifiers helpful?

- *Yes, but...*

...only if used widely and reliably

- Incentives for authors
- Mandatory use

Centralized compilation?



By whom?

- CDS, “Worldwide VO”, IAU...
- not one single institution
- decentralized team

Bibliographies publicly available?

- Dedicated **webpage** or through **ADS (Filter)**
- Collection of publication lists at ESO Library










<http://www.eso.org/libraries/publicationlists.html>

Telescope bibliographies

http://www.eso.org/gen-fac/libraries/publicationlists.html

Fotowerkstatt GIMA Mü... uta.grothkopf@mac.com Telescope bibliographies Citation Statistics Checkout Library Items ESO Telescope Bibliogra...

Space-based Observatories

-  **ASCA (Advanced Satellite for Cosmology and Astrophysics)**
 - ▶ [HEASARC Bibliographic Code Status](#) (NASA's HEASARC:Archive)
 - ▶ [ASCA Bibliographies](#)
-  **Chandra**
 - ▶ [Chandra Bibliography Search](#)
 - ▶ [Chandra Bibliographic Statistics](#)
-  **FUSE (Far Ultraviolet Spectroscopic Explorer)**
 - ▶ [FUSE Publications](#)
-  **HST (Hubble Space Telescope)**
 - ▶ [HST Bibliography](#) (STEPsheets, maintained by the library)
 - ▶ [HST/MAST Bibliography](#) (via ADS, activate Filter "Select References In: HST")
-  **ISO (Infrared Space Observatory)**
 - ▶ [Scientific Publications](#)
-  **IUE (International Ultraviolet Explorer)**
 - ▶ [IUE Scientific Publications 1978 - 2001](#)
-  **ROSAT**
 - ▶ [HEASARC Bibliographic Code Status](#) (NASA's HEASARC:Archive)
 - ▶ [ROSAT Bibliography](#)
-  **RXTE**
 - ▶ [HEASARC Bibliographic Code Status](#) (NASA's HEASARC:Archive)
-  **XMM-Newton (X-ray Multi-Mirror)**
 - ▶ [HEASARC Bibliographic Code Status](#) (NASA's HEASARC:Archive)
 - ▶ [XMM-Newton in the Journals](#) (by author and subject)

Prospects

- Better coordination of selection criteria and methodologies
- Meeting ?

