

In-Situ Observation: Coordination Needs and Benefits

Hans-Peter Plag^{1,2}, Joan Maso³ and the
2016 Team of the GEO Foundational Task on GEOSSE In-
Situ Earth Observation Resources

1 Old Dominion University, Norfolk, VA, USA

2 Tiwah UG, Germany

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Funded by EC in Horizon 2020 grant agreement No. 641538

GD-06 “GEOSS In-Situ Earth Observations” *with in-situ: anything not space-based*

– Main objectives:

- Analyze current trends and develop new scenarios for in-situ observations
- Promote and coordinate in-situ observation systems
- Identify data resources needed by GEO activities
- Compile global perspective on existing plans for new in-situ observation networks
- Promote coordination of in-situ and space-based observations

– Main achievement in 2016: Report “In-Situ Observations: Coordination Needs and Benefits”

Report

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Suggested Reference:

Plag, H.-P. and J. Maso (eds.), 2016. In Situ Observations: Coordination Needs and Benefits. GEO Secretariat, Geneva, Switzerland. 36 Pages.

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REFERENCES

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Summary

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Benefits of Coordinating In Situ Earth Observations

- many of the services require within domain and cross-domain coordination of in-situ observations (e.g., in meteorology, geodesy, hydrology, biology, ...)
- many of the grand challenges require coordinated in-situ observation (e.g., implementation and monitoring of SDGs, documenting global change and its impacts on humanity, sustainable use of resources, risk governance and disaster risk reduction, prediction of environmental conditions)
- for full exploitation, networks require more coordination than currently available

5 CONCLUSIONS AND RECOMMENDATIONS

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5.2 Challenges of Coordinating In Situ Earth Observations

- complex regional landscape
- fragmentation at regional and global levels
- some networks have global coordination (e.g., geodesy) but many don't
- new approaches (citizen scientists, Internet of Things, crowd-sourcing adds new coordination needs
- integration of new data types

5 CONCLUSIONS AND RECOMMENDATIONS

5.2 Challenges of Coordinating In Situ Earth Observations

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5.3 Recommendations to GEO

The Task Team of GD-06 recommends that

- a **process to coordinate** the development of sets of **domain-specific Essential Variables** be convened by GEO and those **EVs that require in situ observation** be identified;
- the **need for regional trans-boundary and cross-domain coordination of in situ Earth observations**, including semantic harmonization, adoption of standards, processing of data to generate information products of value for societal users and the adherence to GEO data sharing and management principles, be **emphasized and covered with the needed resources in the GEO Work Programme**;
- a **comprehensive gap analysis to identify gaps in the in situ networks vis-à-vis GEO programmes'** requirements for in situ observations be convened by GEO with the goal of **providing guidance for the maintenance of existing and the development of new in situ networks**.

5 CONCLUSIONS AND RECOMMENDATIONS

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5.4 Recommendation to the GEO in-situ working group in the 2017-2019 Work Programme

The Task Team of GD-06 recommends that

- the **survey** of the state of in-situ observations and their coordination be **further detailed and extended** to include Africa, the Americas, and Oceania and also add additional domains in Asia;
- existing and potential new **coordination models be assessed**;
- the **role of the private sector** as provider and user of in situ observations be considered;
- efforts be made to provide a **more complete picture of the risks of loss** of observational continuity and issues that reduce the sustainability of in-situ networks, impact the cross-domain integration and coordination, and hamper the full exploitation of the societal benefits of these observations;
- the in-situ working group take an **active role in collecting relevant in-situ data requirements and a gap analysis and prioritization process** that can provide guidance to the in-situ communities with respect to unmet user needs and the prioritization of existing and new networks.

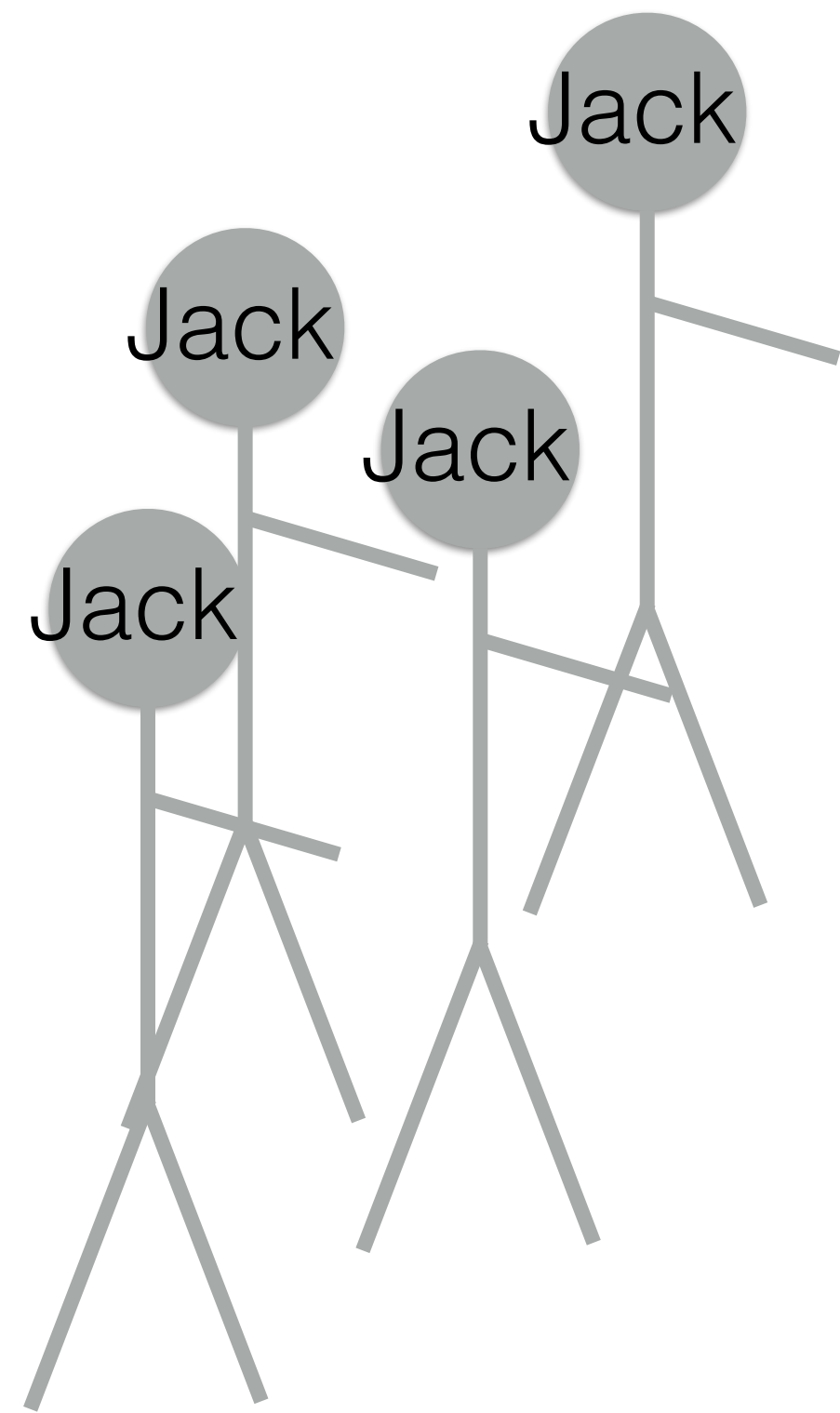
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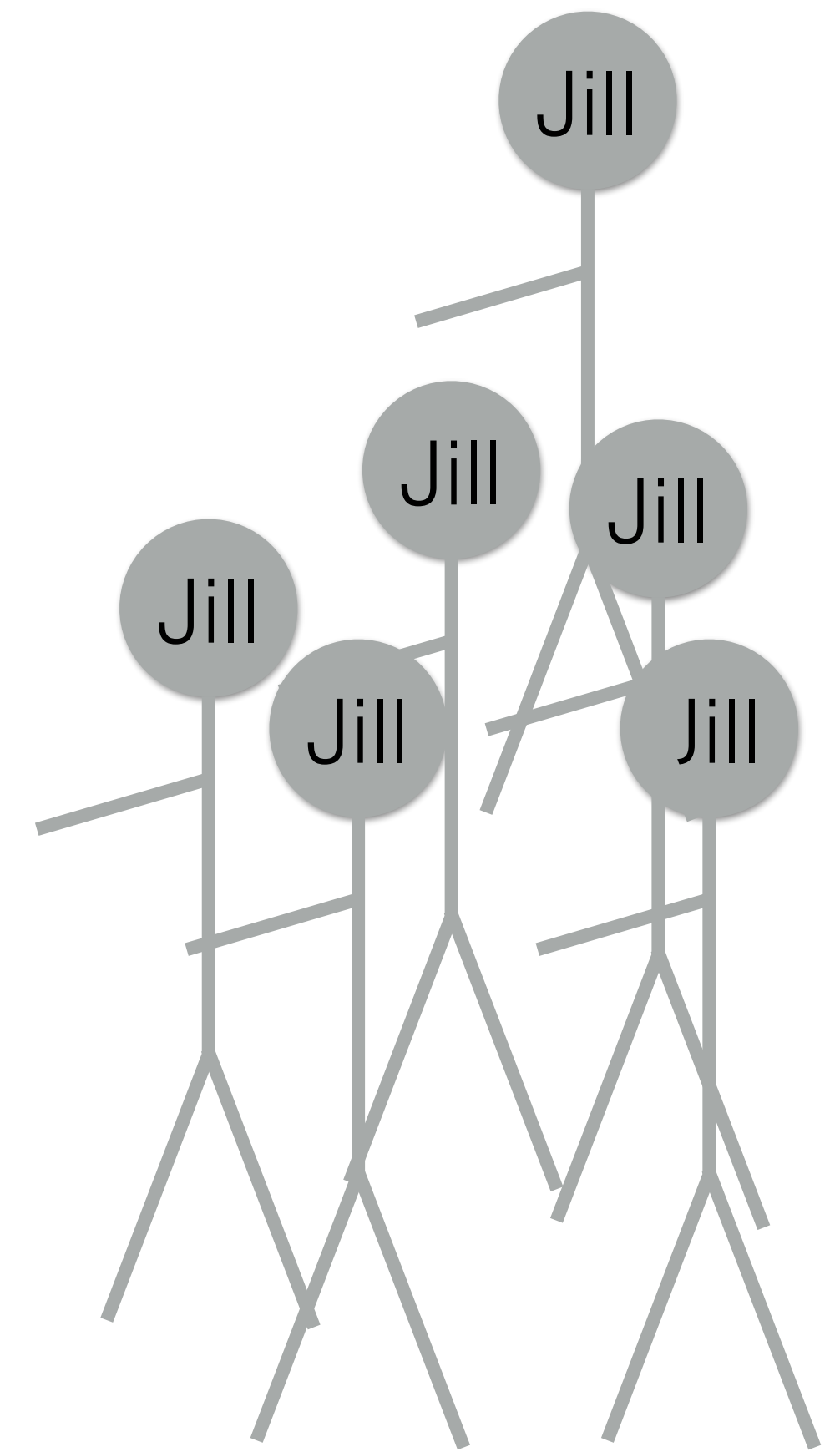
Now: New Buzzword: Matchmaking

From Coordination to Matchmaking

Governance/Science/Private



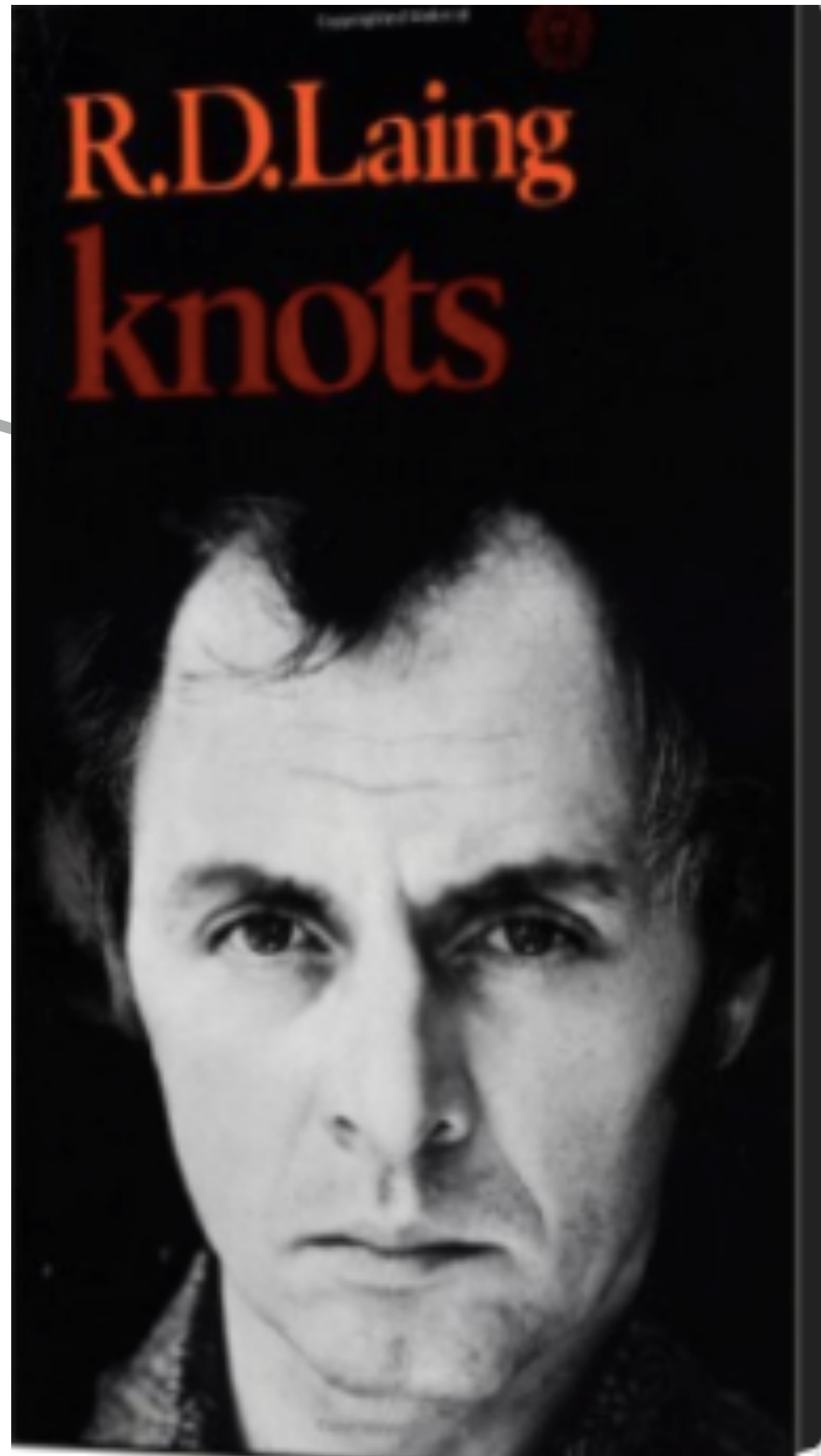
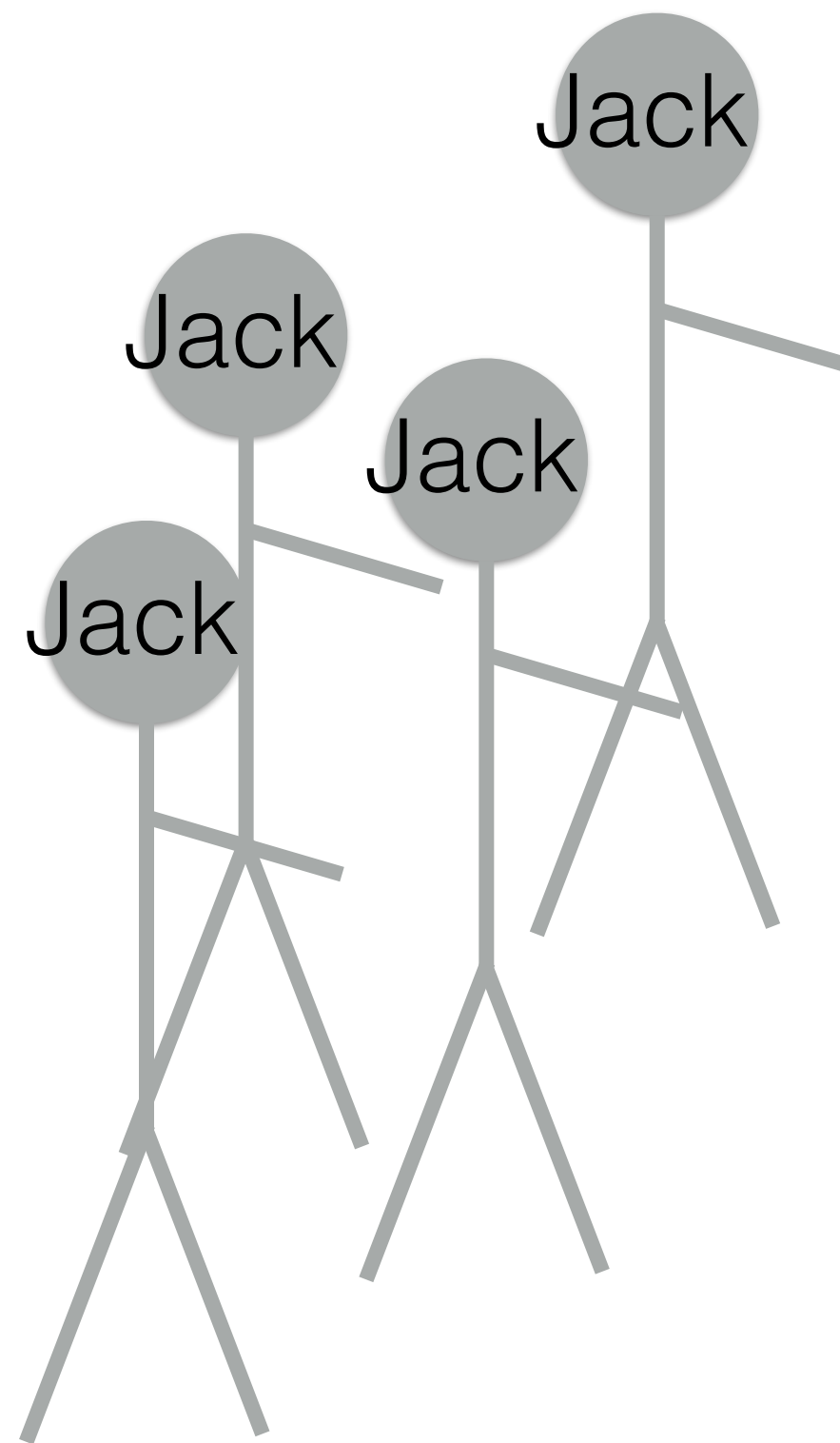
Earth Observation



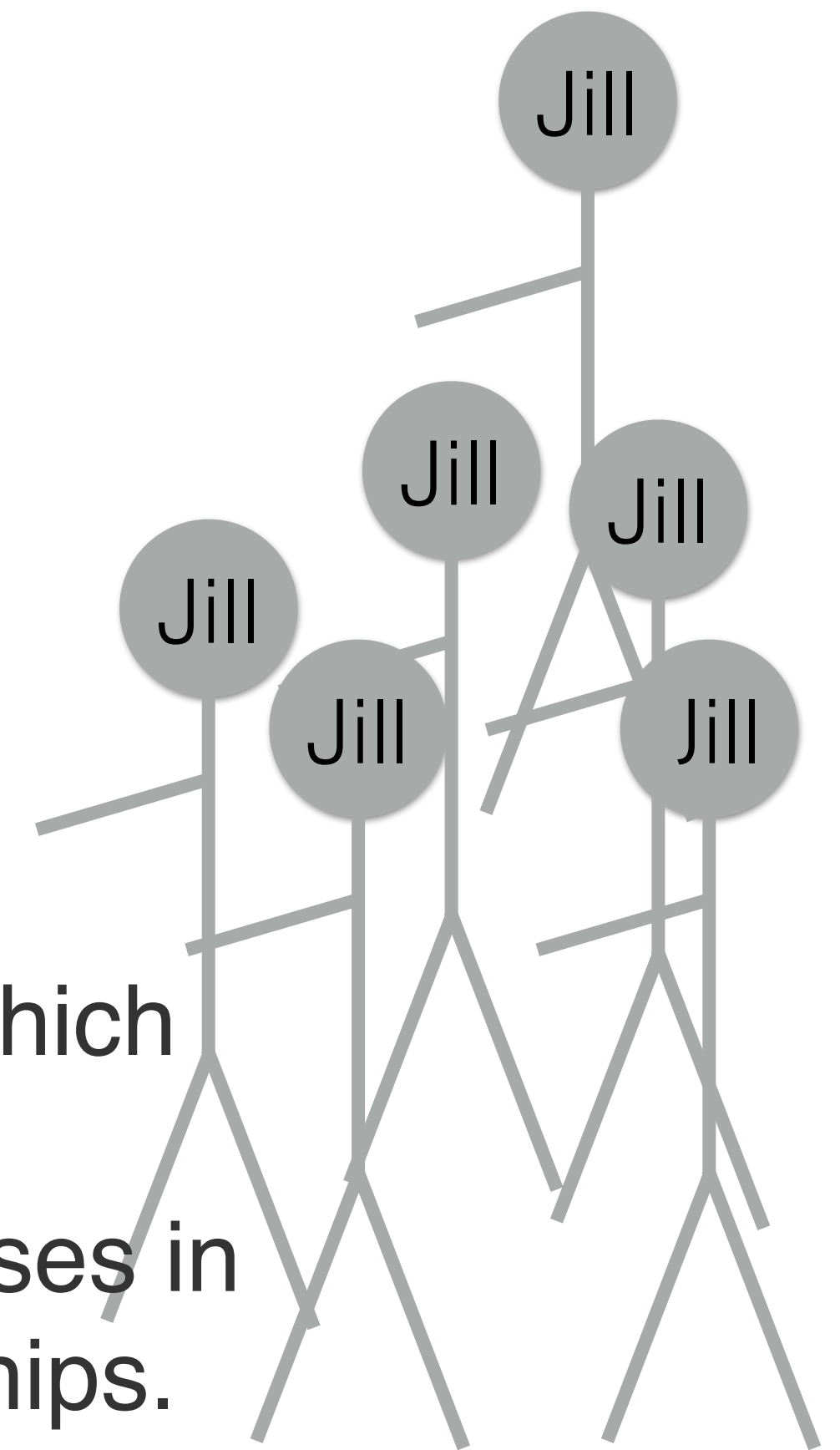
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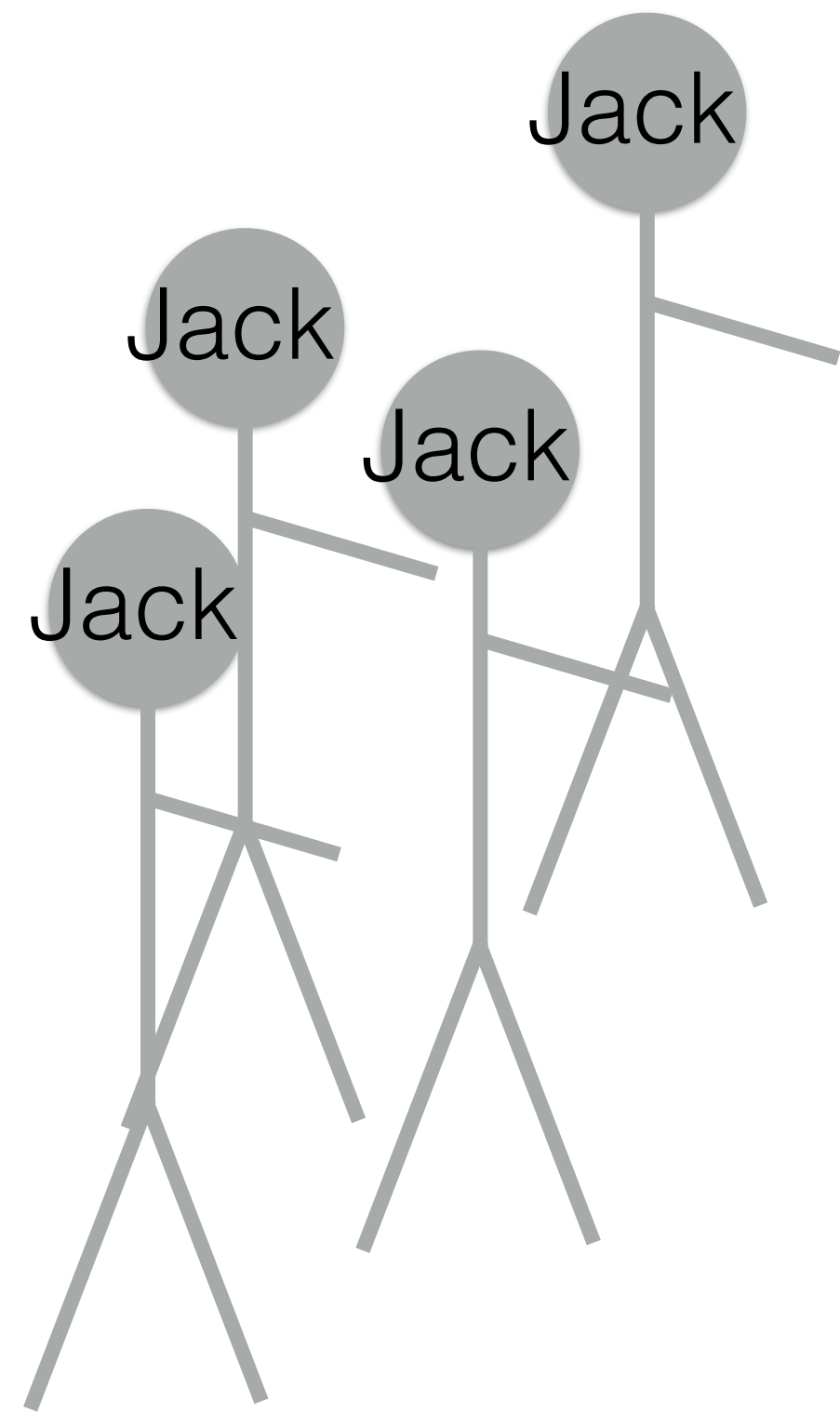


A series of dialogue-scenarios, which can be read as poems or plays, describing the "knots" and impasses in various kinds of human relationships.

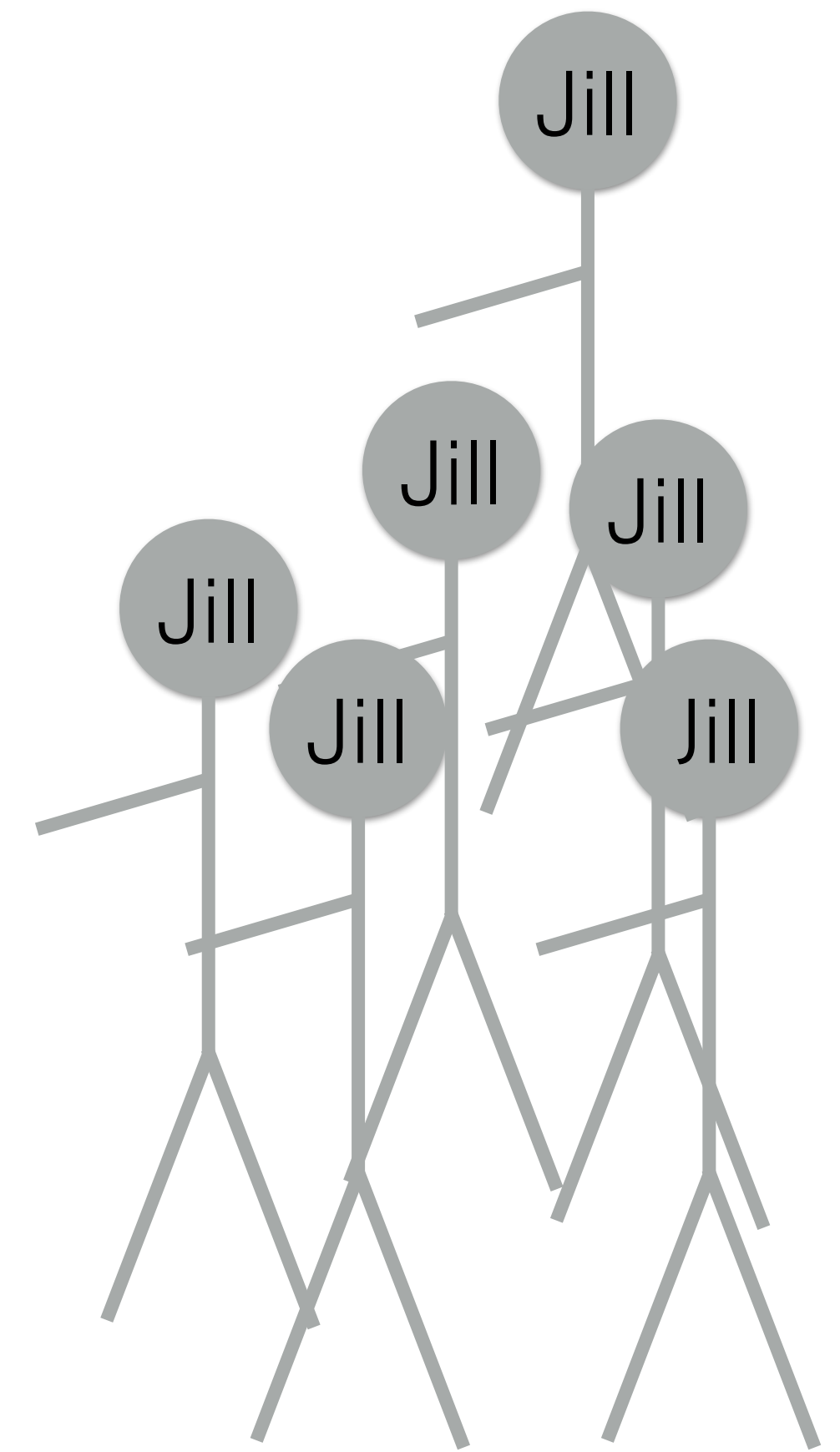


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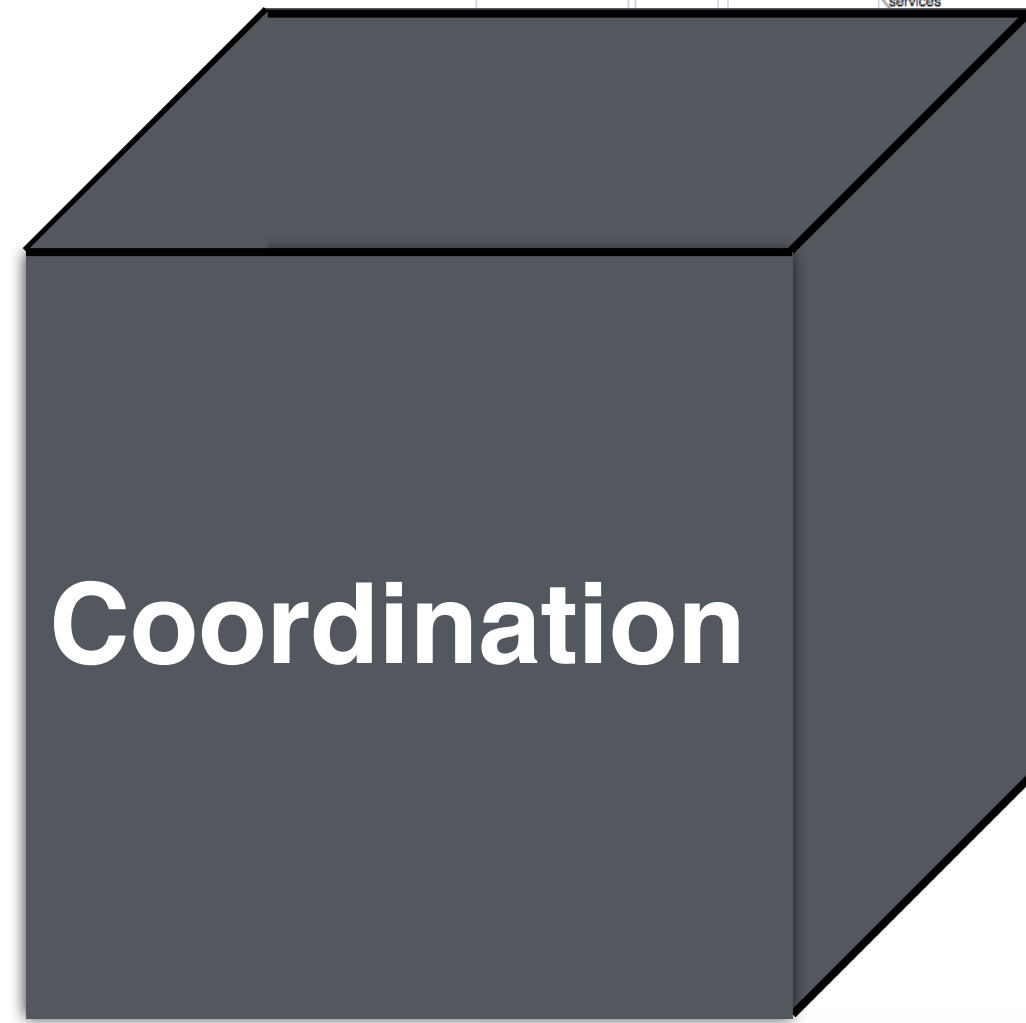
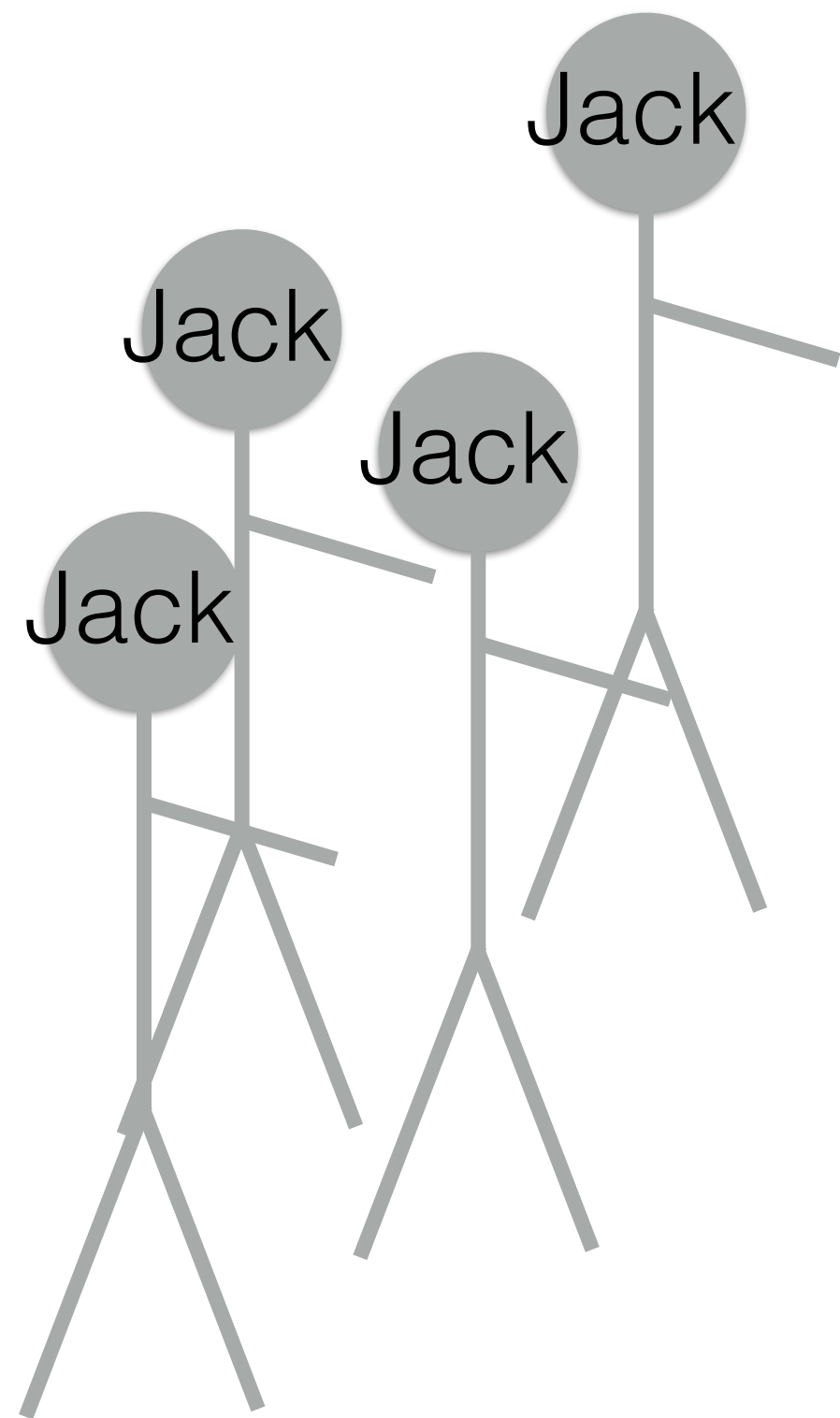
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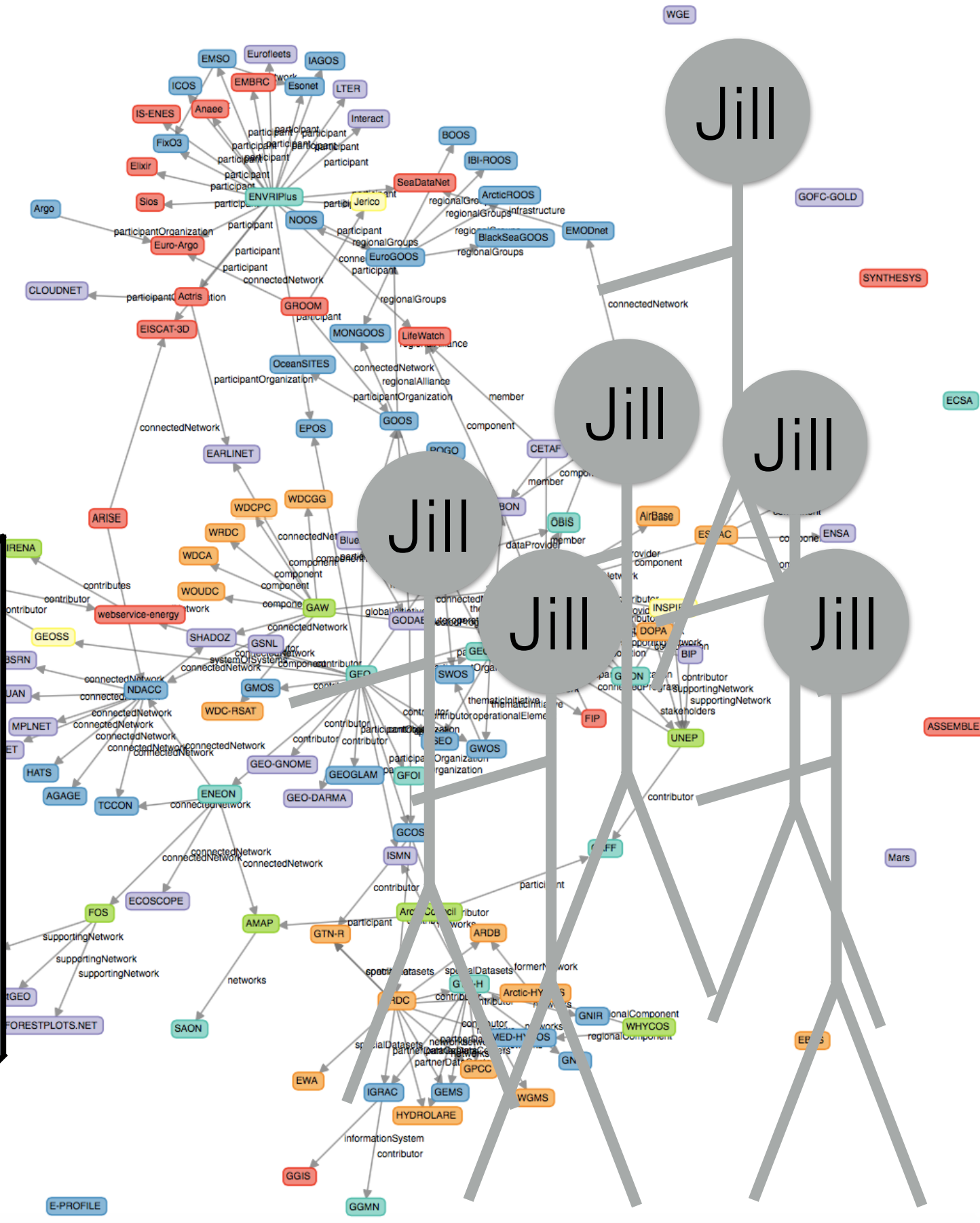
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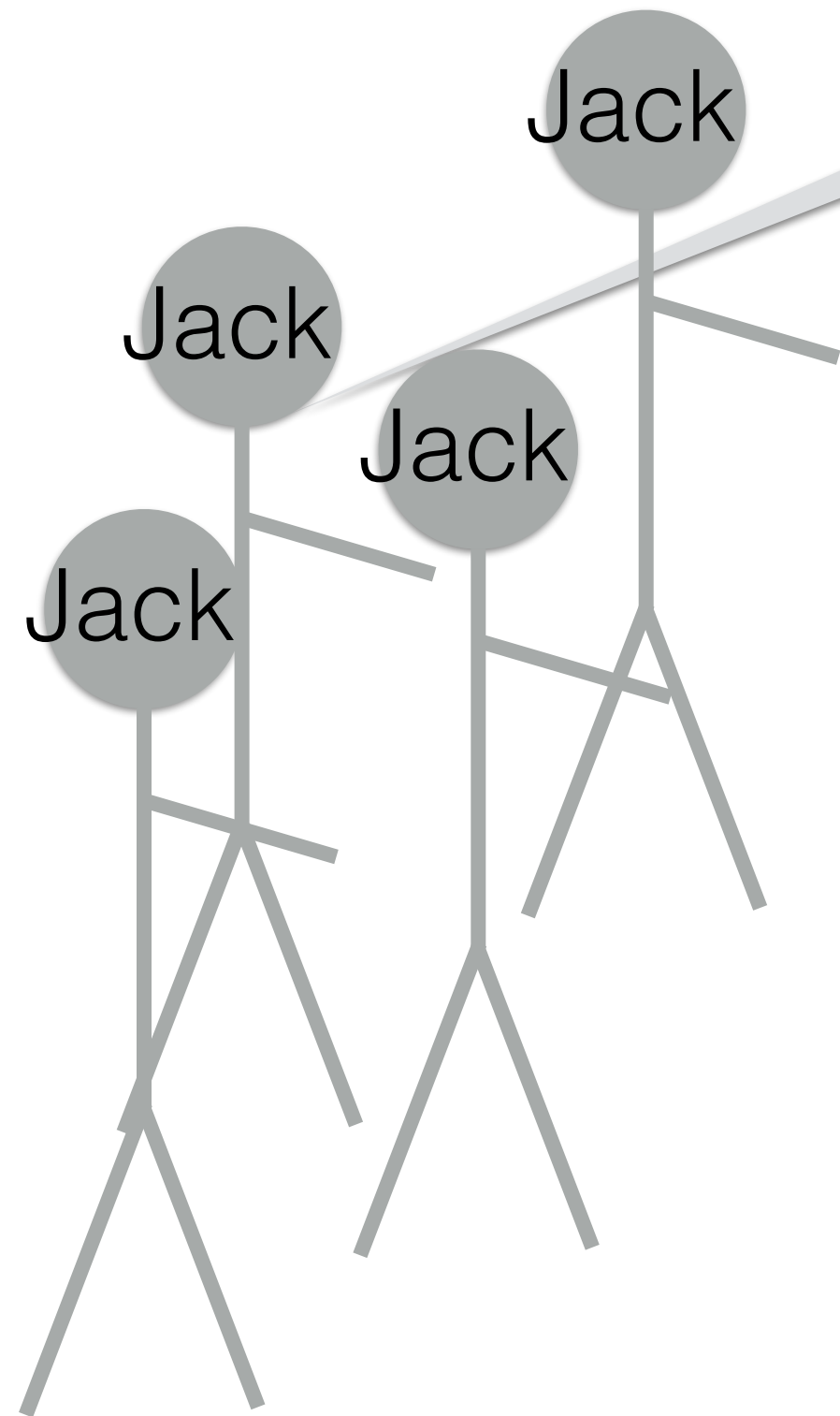
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- Network
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- Program



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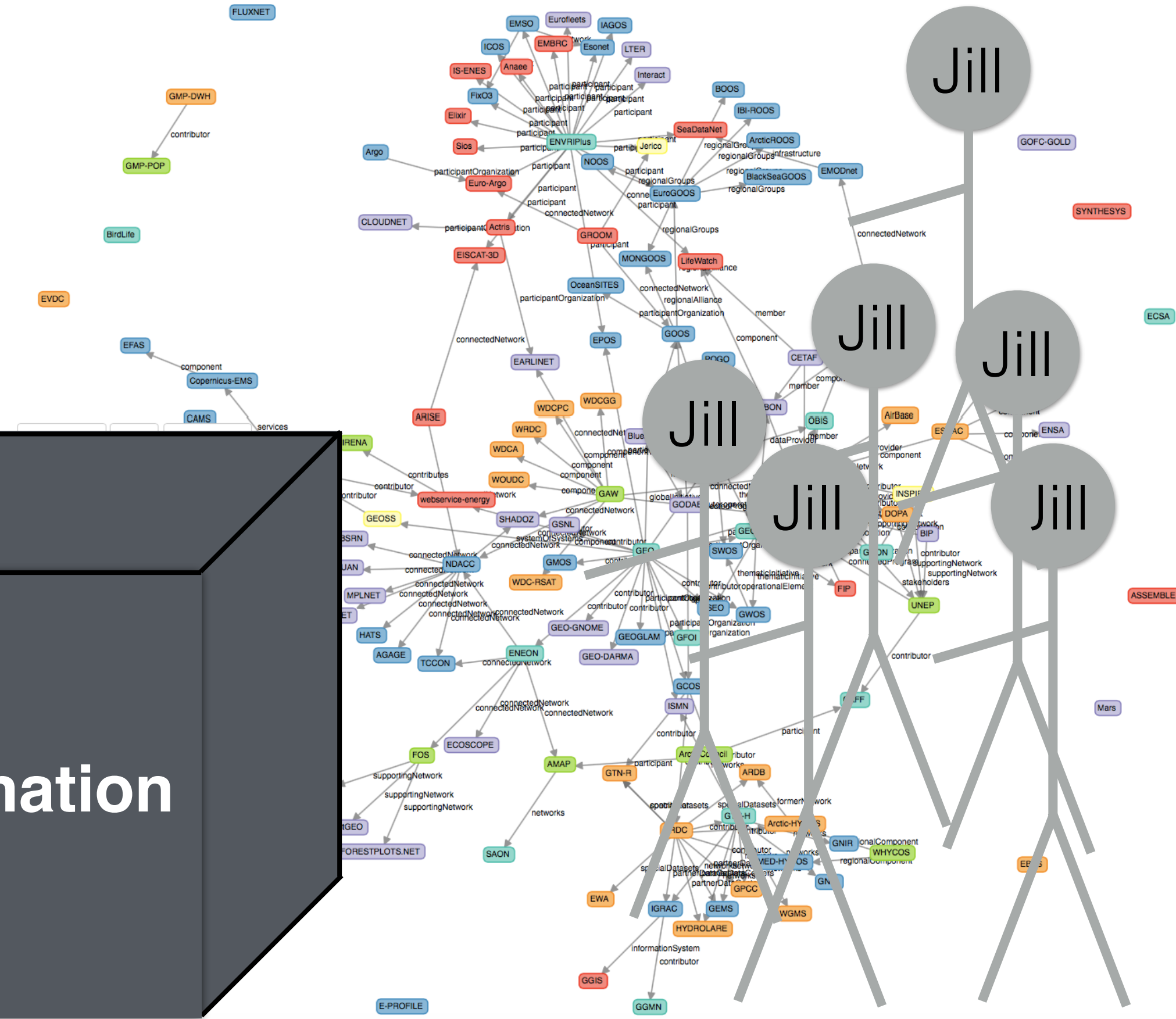
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Coordination

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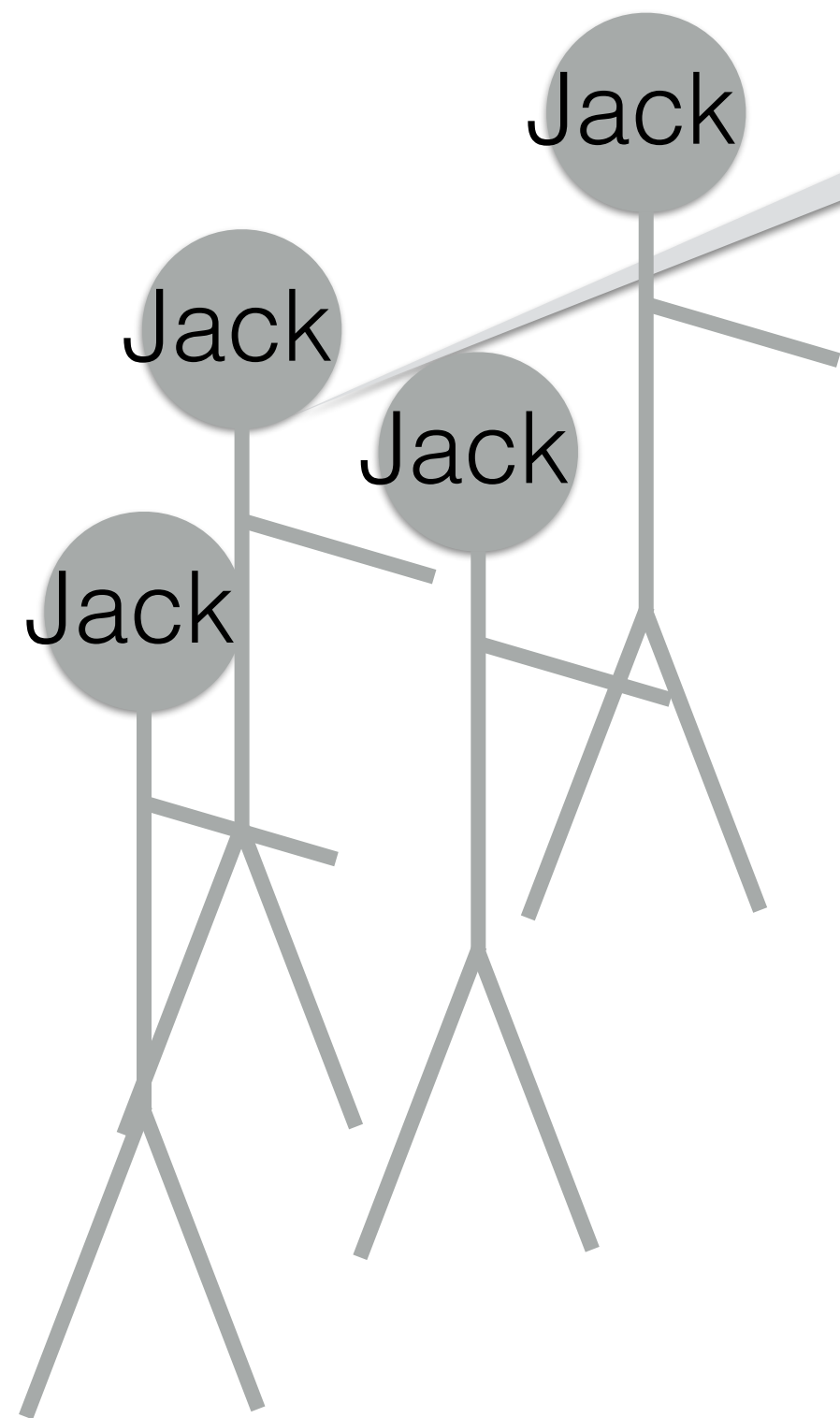
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We have a complex/
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We will help you
find partners!

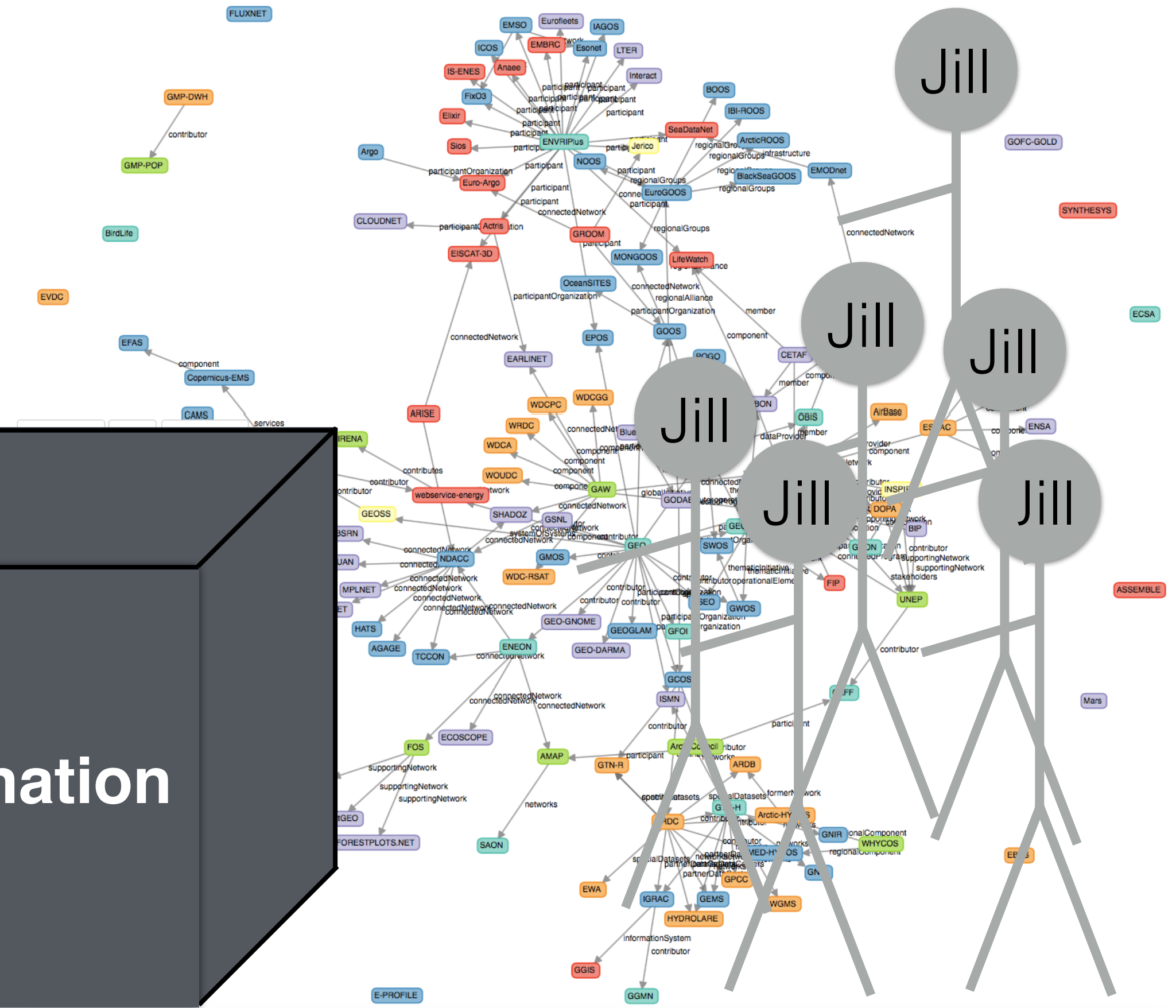
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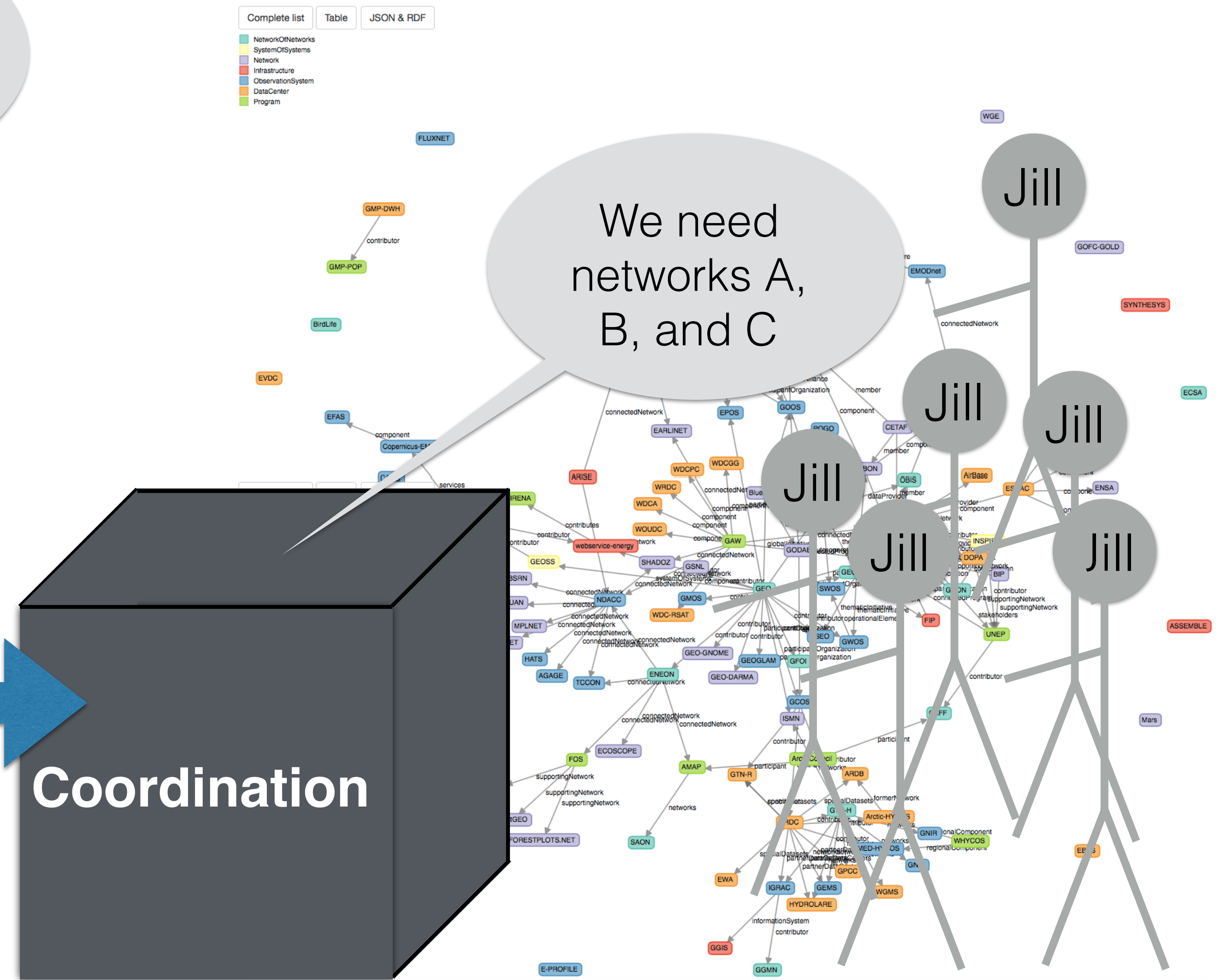
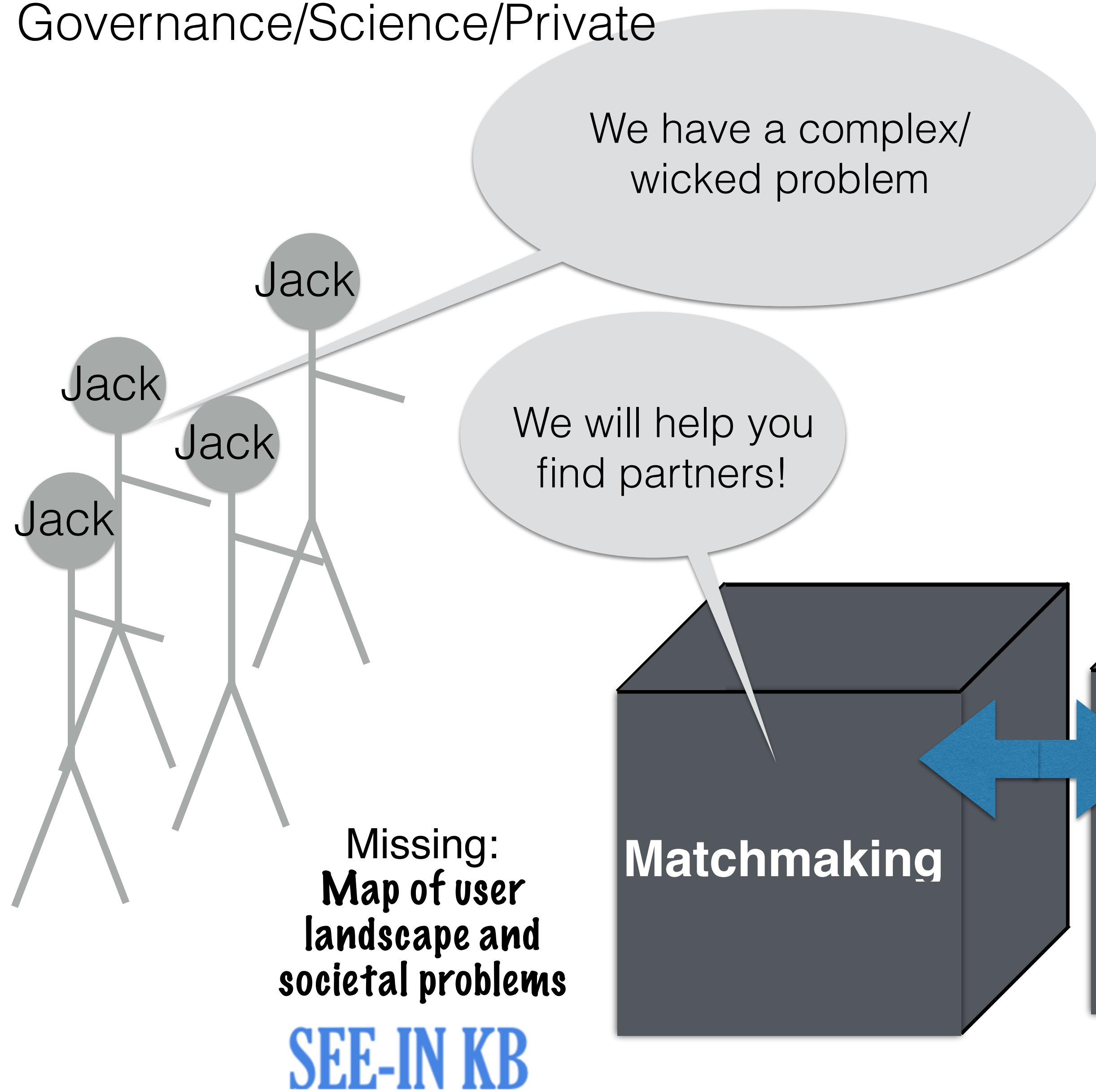
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We have a complex/
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Develop Use Cases
that require Matching
and Coordination

We need
networks A,
B, and C

Matchmaking

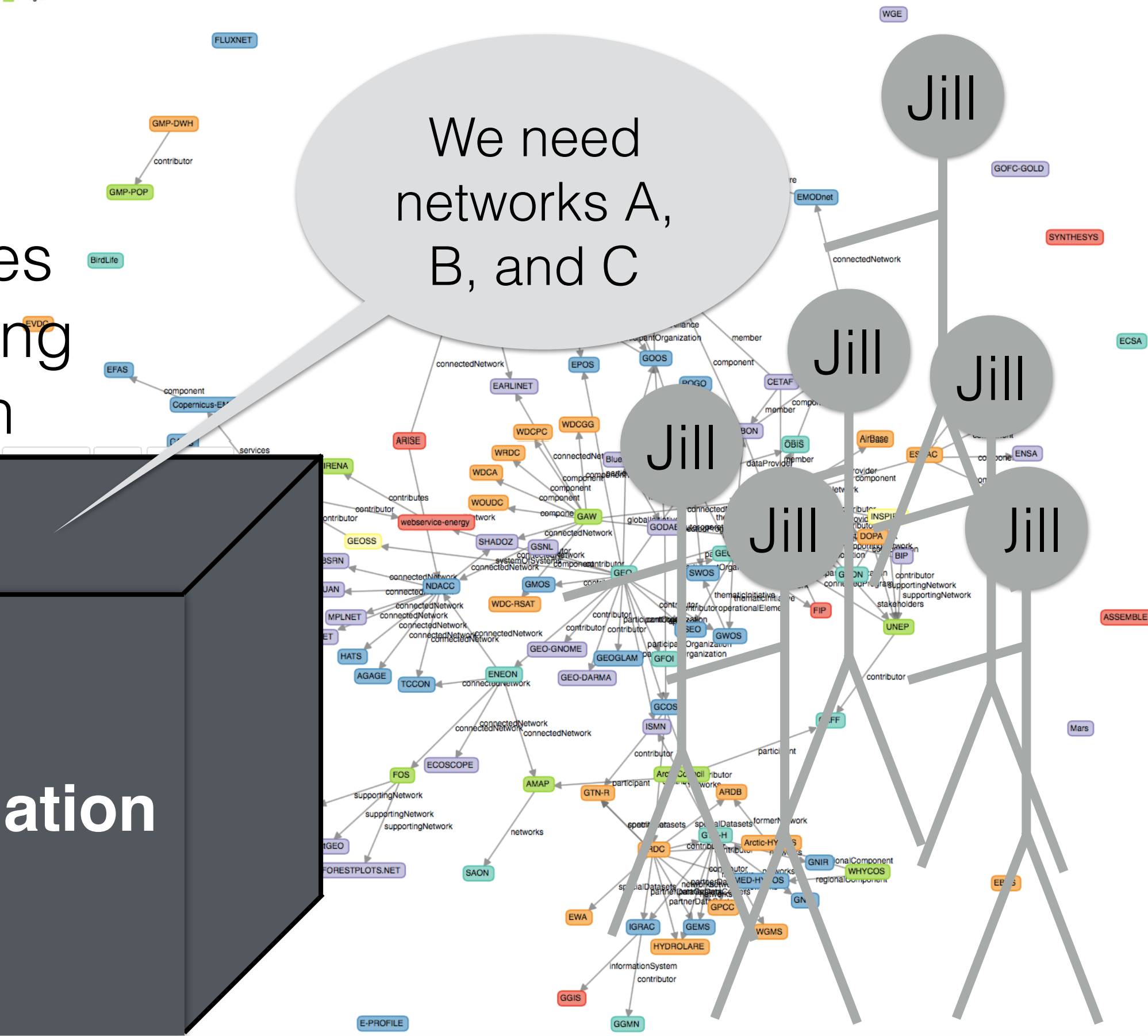
Coordination

Missing:
Map of user
landscape and
societal problems

SEE-IN KB

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GATYPE: Educational

DESCRIPTION: Skills required for matching providers and policy makers.

PURPOSE: Developing policies and actions for the implementation of SDGs: the matching of providers who can provide products and tools supporting policy developments for the implementation and the monitoring of SDGs with those engaged in the implementation and monitoring of SDGs is not happening sufficiently because of a lack of people with matching skills. Educational efforts need to be made to address this gap.

REMEDY: Develop educational programs that focus on inter-sectoral skills.

FEASIBILITY: Very High (4)

IMPACT: High (3)

COST: Low (1)

PRIORITY: High (3)

TIMEFRAME: Short term (1)

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TIMEFRAME: Short term (1)

RECOMMENDATION:

Mobility: It is recommended that mobility funding programs such as the Marie Skłodowska-Curie Individual Fellowships emphasize mobility across disciplinary and sectoral boundaries with the goal to increase skills in matching providers and users.