

# Onboarding Webinar

Online - 19 June 2021



**Schlumberger**

# Welcome Onboard!



**43** teams

With 11 teams as challengers

**17** companies

**16** universities



**172** people

From **50** cities

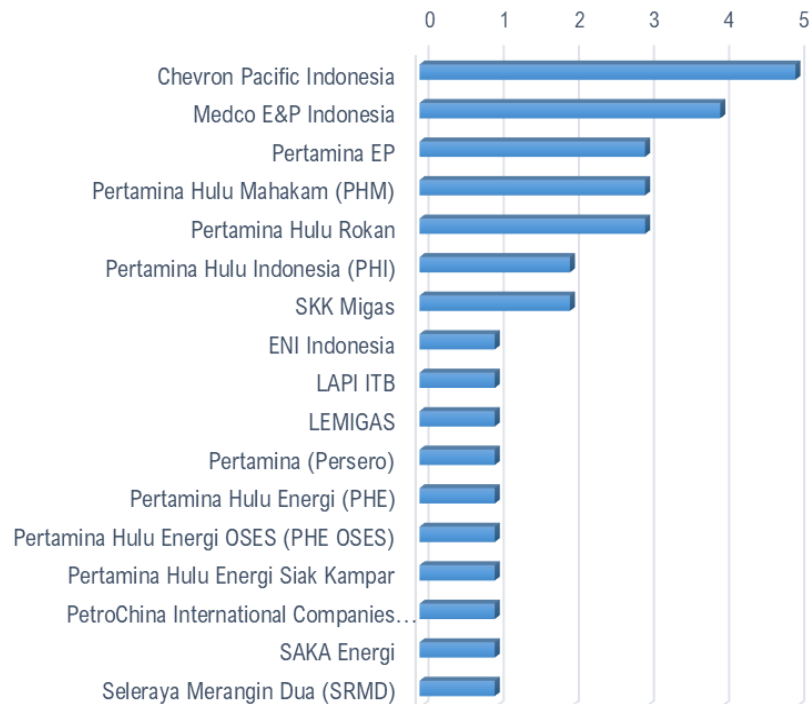
# Welcome Onboard!

Hackathon Team		
No	Team Name	Company
1	Pandora	Pertamina Hulu Indonesia
2	Datastream	Pertamina Hulu Rokan
3	Patrallurgi	Medco E&P Indonesia
4	Gaussian Process	PHE OSES
5	Geomachine	Pertamina Hulu Mahakam
6	ACTON TEAM	SKK Migas
7	Arcnesia	PHE Siak Kampar
8	Data Science UIR	LAPI ITB
9	OBTENIR	Medco E&P Indonesia
10	YoungFacilityExperts	Chevron Pacific Indonesia
11	Hackaton Ceria	ENI Indonesia
12	Occult	Chevron Pacific Indonesia
13	TeuKapikiran	Chevron Pacific Indonesia
14	Aftershock	Pertamina Hulu Indonesia
15	Al Khawarizmi	Chevron Pacific Indonesia
16	Am meta	Pertamina Hulu Mahakam
17	LARSON	SKK Migas
18	Worm	Seleraya Merangin Dua
19	CodeRed	PetroChina International Companies Indonesia
20	UNLOCK YOUR POTENTIAL	Medco E&P Indonesia
21	Dynamic Energy	Chevron Pacific Indonesia
22	Red Apple	Pertamina Hulu Rokan
23	Jati Kusumo Team	Pertamina EP
24	REMOTE TEAM	Pertamina Hulu Mahakam
25	Enigmatic	Medco E&P Indonesia
26	Utah O'rock	Pertamina Persero
27	Patramina	Pertamina EP
28	Hackuna Matata	Pertamina Hulu Rokan
29	Magnitude	Pertamina Hulu Energi
30	Ingenium	SAKA Energi
31	BAI Team	Pertamina EP
32	Petro Boost	PPPTMBG Lemigas

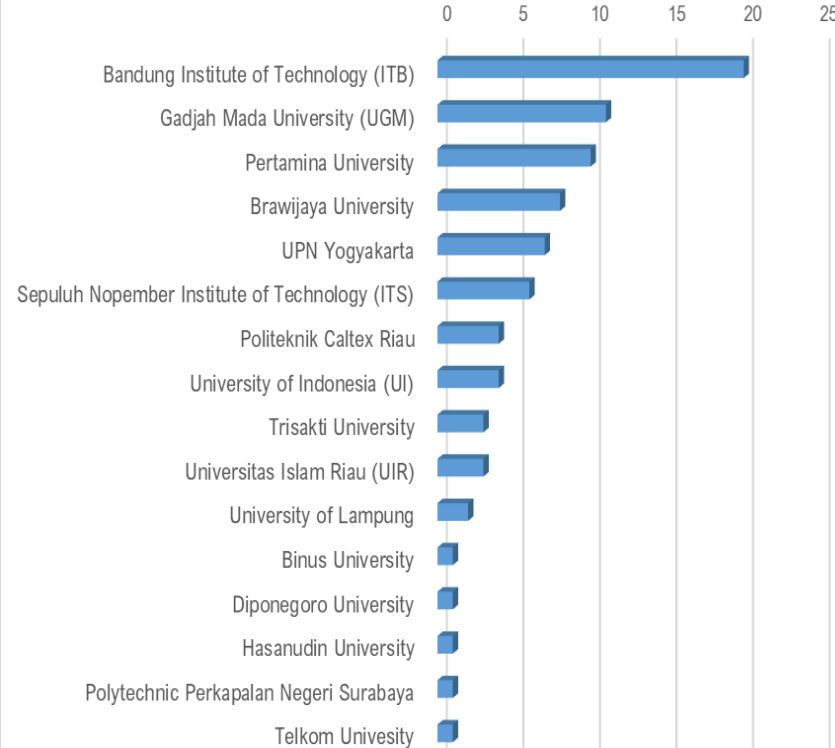
Hackathon Challenger Team		
No	Team Name	Company/University
1	Viktoritz	Pertamina (Persero)
2	OFM Boyz	Sharing Vision Indonesia
3	Tigata Oil	Pertamina (Persero)
4	Indieguys	ITB
5	Mahadaya	UPN Veteran Yogyakarta
6	SALT	ITB
7	Hore	Polytechnique CALTEX Riau
8	Algonozoic	UGM
9	Dewata	Gada Energi
10	Delfin	Bank Negara Indonesia
11	Rock-Star Technology	Trisakti University

# Get to know each other!

Professional Participants



Student/Fresh Graduates Participants



**35%** – Petroleum Engineering  
**31%** – Geology & Geophysics  
**16%** – Computer Science & Informatics

With **12%** of them are Master's students

**51** Young Professionals

**58%** - Working in data science field  
**25%** - Working in oilfield

Some young professionals in data science field are from:

Telkom, BNI, Danone, Astra Int.  
Tokopedia, Bukalapak, Traveloka, Zenius

# Important Note!

## Competition Agreement

### Schlumberger DELFI Data Science Hackathon 2021 Agreement

This Schlumberger DELFI Data Science Hackathon Agreement ("Agreement") forms a binding legal agreement between you ("You" or "User") and ("Schlumberger" or "Company") with respect to the Schlumberger DELFI Data Science Programming Competition ("Competition"). "Schlumberger" shall also include affiliates of Schlumberger ("Affiliates"). For the purpose of this Agreement, "Affiliate" means any entity controlling, controlled by or under common control with Schlumberger, where 'control' is defined as the ownership of the voting shares of such entity.

You are agree that Your submission of any materials ("Submission"), including, without limitation, any ideas, guidance, comments, suggestions, queries, ideas, concepts, information, inventions, writings, software, source code, know-how, processes, algorithms, formulas, documentation, modifications or improvements ("Materials"), in connection with the Competition Agreement ("Agreement"). You may not enter a Submission, and You are not eligible to receive any prizes related to the competition, unless You agree to this Agreement.

8. **PUBLICITY.** By participation in the Competition, You agree that Schlumberger may publicize Your name, likeness, and the description of the Submission and/or Materials. Schlumberger shall not be obligated to compensate You in any way for such publicity.

Date : \_\_\_\_\_

Your Name : \_\_\_\_\_

Your Sign :  \_\_\_\_\_

Phone : \_\_\_\_\_

## EXHIBIT A: DELFI TEMPORARY ACCESS AGREEMENT

Access Given : DELFI Data Ecosystem, DELFI Data Science and DELFI PetroTechnical Suite (Optional)

Name : \_\_\_\_\_

### 10.0 Access Period.

The Access Period shall run till the end of the Competition and shall be equal to One Month.

Please indicate your acceptance of these terms by signing below where indicated and returning the signed copy to Company.

Schlumberger \_\_\_\_\_

APPROVED BY: Schlumberger

Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

ACCEPTED BY: [Insert Name of User]

Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

# Where are we now?



# What is Proposal Phase?

Proposal Phase invites participants to **submit their ideas** to solve one out of available 4 challenges

## What is needed to be submitted?

- 5 – 10 slides of presentation deck (template provided)

## Who will go through?

- Top 10 Teams + 1 Challenger Team,  
but all teams submitted will get certificate





# Timeline & Rules

## Deliverables

- If a Participant does not upload a proposal on the submission platform before the deadline, this will be considered as a withdrawal from the Hackathon. The Participant may not join the Hackathon and may not obtain any compensation.
- Proposal submission should follow “Submission Guidelines”
- The proposal should include exclusive contributions from a team
- Otherwise, if content from a third party has been used in the development of the proposal, all rights, authorizations and agreements necessary to submit the proposal and grant the rights mentioned herein have been obtained. The existence of uncredited third-party contributions in the deliverable will result in the disqualification of the deliverable and the related participants
- The content of the proposal does not and will not infringe or violate any rights of any third party or entity, including, without limitation, intellectual property rights, privacy, competition law, confidentiality, or any contractual or extracontractual right. All deliverables suspected of any law(s) and/ or any third party's right will be ineligible
- Participants are responsible for and shall bear any costs or expenses associated with preparing and submitting the proposal. Participants assume all risk for damaged, lost, late, incomplete, invalid, incorrect or misdirected proposal

## Selection Criteria.

- Proposals will be judged according to the Evaluation Criteria. You agree and acknowledge that the Challenge relies on your creativity, capacity, ability, and ingenuity to solve difficult problems. The Challenge does not depend, even partially, on chance or luck, and therefore should not be considered as a lottery. Under no circumstances are factors such as appearance, religion, membership in a trade union, political opinions or sexual orientation considered.

2 Weeks

2 Weeks



**12<sup>th</sup> June**

- Registered teams announced
- *Proposal-phase* Slack channel onboarding

**14<sup>th</sup> June**

Data inventory and snapshots shared

**19<sup>th</sup> June**

Onboarding Webinar

**22<sup>nd</sup> June – 4<sup>th</sup> July**

Proposal Submission

**5<sup>th</sup> July – 18<sup>th</sup> July**

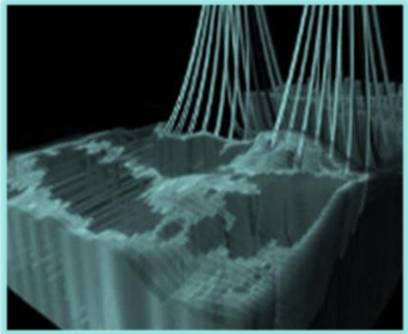
Proposal Phase Evaluation

**21<sup>st</sup> July**

Proposal Phase Top 10 announcement



# Challenges



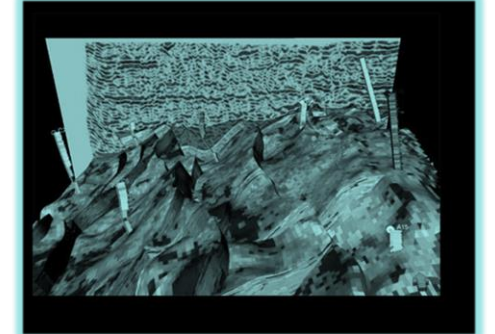
Reservoir



Production

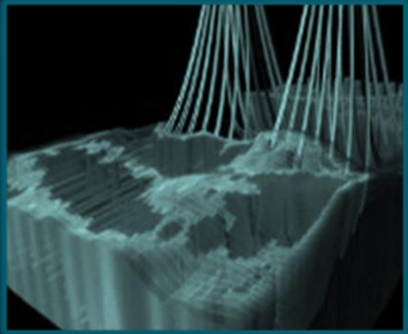


Geomechanics  
& Drilling

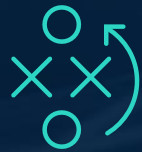


Geoscience

# Problem Statement & Ideas



Reservoir



What is the best scenario to maximize oil recovery?

Driving Mechanism Identification



Analytics

Sweet Spot Identification



Analytics + ML

Compartmentalization Analysis



Analytics + ML

EOR Screening

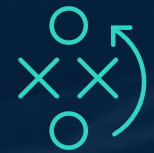


Analytics

# Problem Statement & Ideas



Production



How can we enhance and optimize production with less cost?

Artificial Lift Optimization  Analytics + Solver

Artificial Lift Screening  Analytics

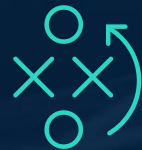
Workover Candidate Screening  Analytics

Virtual Flowrate Estimation  Analytics + ML

# Problem Statement & Ideas



## Geomechanics & Drilling



How can we utilize data to minimize drilling risk?

ROP Prediction for Drilling Operation Optimization

Mud Weight Window Prediction for Drilling Purposes

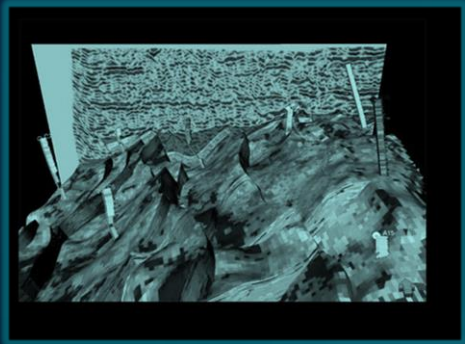


Analytics + ML

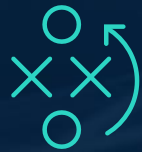


Analytics + ML

# Problem Statement & Ideas



Geoscience



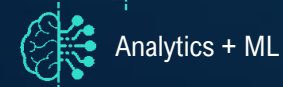
How can we utilize data to ease reservoir characterization?

Automatic Well to Well Correlation



Analytics + ML

Seismic Sweet Spot Screening



Analytics + ML

Log Reconstruction



Analytics + ML

Predicting Producibility of the Reservoir



Analytics + ML

# Data



# Evaluation Criteria

Stage	Evaluation Criteria	Description	Weighting
Proposal Phase 2 Weeks	Value proposition	Business value of the proposed solutions and alignment towards the main problem statement of the domain	35%
	Solution Completeness	The comprehensiveness level of the solution to be implemented on DELFI DS Profile. <ul style="list-style-type: none"><li>• Type of data used</li><li>• Technology used</li><li>• Utilization of other Petro-technical Suites</li><li>• Analytics/ ML/ DL Engine used</li></ul>	25%
	Originality of the solution	Is there any novel idea (approach is different from the industry's similar solution) with the data provided?	35%
	Webinar participation	Additional points for attending DELFI and Dataiku webinar	5 %

Evaluation period : 5<sup>th</sup> – 18<sup>th</sup> July

# Evaluation Sheet

Score	Rating	Definitions (Choose and/or Modify as Appropriate)
<b>5</b>	Excellent. Exceptional Mastery. Much more than acceptable.	Should ensure extremely effective performance. Significantly above criteria for successful job performance. Surpassed expectations. Reserved for the exemplary set of skills that yield a particularly sophisticated approach to handling the situation. Meets all major / essential / core criteria or acceptable equivalents and met three or more additional criteria.
<b>4</b>	Very Good. Full Performance Behaviours. Above average.	More than adequate for effective performance Generally exceeds criteria relative to quality and quantity of behaviour required for successful job performance. Meets <u>all</u> of the major / essential / core criteria or acceptable equivalents and several of the minor / <u>additional</u> criteria. No major deficiencies exist in the areas assessed. Consistently demonstrated better than average level of performance. Describes / demonstrates the full range of skills appropriate for handling the situation and the desired result, or outcome is obtained.
<b>3</b>	Good. Acceptable. Satisfactory Average	Should be adequate for effective performance. Meets criteria relative to quality and quantity of behaviour required for successful job performance. Meets several of the major / essential / core criteria one or two of the minor / additional criteria or acceptable equivalents. Describes / demonstrates a <u>sufficient</u> range of skills for handling the situation and the desired outcome is obtained. Some of the major and minor criteria were met; some deficiencies exist in the areas assessed but none of major concern.
<b>2</b>	Weak. Less than Acceptable	Insufficient for performance requirements. <u>Generally</u> does not meet criteria relative to quality and quantity of behaviour required for successful job performance e.g. meets half or less of criteria. Does not describe / demonstrate a sufficient range of skills appropriate for handling of the <u>situation or</u> describes plausible but inappropriate behaviours for handling the situation or the desired result or outcome is not obtained.
<b>1</b>	Unacceptable. Poor. Much less than acceptable	Significantly below criteria required for successful job performance. Few or no criteria met. Many deficiencies. A major problem exists. No answer or inappropriate answer. Describes/demonstrates counter-productive behaviours that have negative outcomes or consequences (make the situation worse).

*Adopted from British Columbia Public Service Agency*

Evaluation Criteria	Description	Weighting	Score (Scale : 1 - 5 )		
			Team 1	Team 2	Team 3
Value proposition	Business value of the proposed solutions and alignment towards the main problem statement of the domain	35%	5	1	3
Solution Completeness	The comprehensiveness level of the solution to be implemented on DELFI DS Profile. •Type of data used •Technology used •Utilization of other Petro-technical Suites •Analytics/ ML/ DL Engine used	25%	5	2.5	2.5
			5	4	3
			5	3	2
			5	1	4
Originality of the solution	Is there any novel idea (approach is different from the industry's similar solution) with the data provided?	35%	5	4	4
Webinar participation	Additional points for attending DELFI and Dataiku webinar	5%	0	0	5
Final Score			4.75	2.375	3.325

# Evaluation Sheet

Domain	Reservoir	Production	Geoscience	Drilling & Geomech
%Submission	40%	30%	20%	10%
To Prototype	4	3	2	1

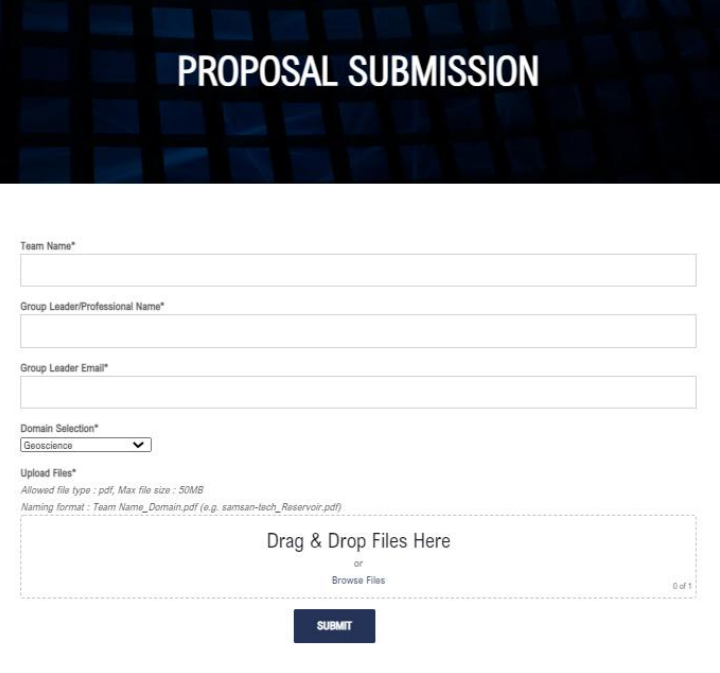
Evaluation Criteria	Description	Weighting	Score (Scale : 1 - 5 )		
			Team 1	Team 2	Team 3
Value proposition	Business value of the proposed solutions and alignment towards the main problem statement of the domain	35%	5	1	3
Solution Completeness	The comprehensiveness level of the solution to be implemented on DELFI DS Profile. •Type of data used •Technology used •Utilization of other Petro-technical Suites •Analytics/ ML/ DL Engine used	25%	5	2.5	2.5
			5	4	3
			5	3	2
			5	1	4
Originality of the solution	Is there any novel idea (approach is different from the industry's similar solution) with the data provided?	35%	5	4	4
Webinar participation	Additional points for attending DELFI and Dataiku webinar	5%	0	0	5
Final Score			4.75	2.375	3.325

## Top 10 Teams:

- Each domain will have a representative
- The number of teams per domain will be based on proposal submissions' proportion

# Submission Guidelines

- Deadline for submission is 4<sup>th</sup> July 2021 23:59 WIB)
- Submit to Website based on **Domain**
- Should (i) address the specific issue set out, (ii) be in a .pdf format and (iii) be in English, and (iv) maximum file size of 50MB
- .pdf naming format:
  - Team Name\_Domain.pdf (e.g. samsan-tech\_Reservoir.pdf)
- Resubmission is allowed, we will take your latest submission after the deadline has passed
- It is highly recommended to follow the template, but teams are allowed to have their own proposal structure
- If a proposal cannot be downloaded, is not in the right format or is incompatible, illegible, or unintelligible, the proposal will be disqualified

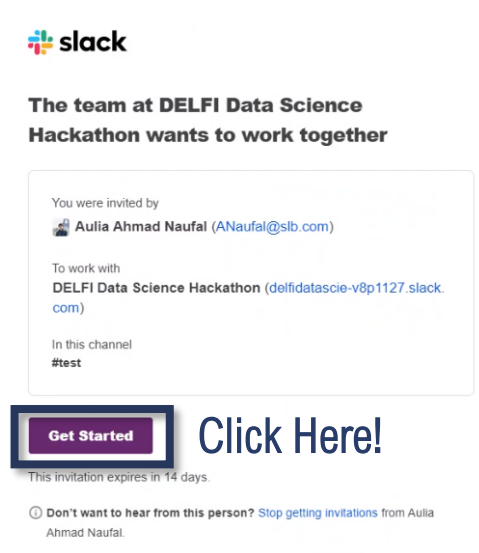


The screenshot shows a web form titled "PROPOSAL SUBMISSION" with a dark blue header. The form fields include: "Team Name\*" (text input), "Group Leader/Professional Name\*" (text input), "Group Leader Email\*" (text input), "Domain Selection\*" (dropdown menu with "Geoscience" selected), and "Upload Files\*" (file upload area). Below the upload area, it specifies "Allowed file type : pdf, Max file size : 50MB" and "Naming format : Team Name\_Domain.pdf (e.g. samsan-tech\_Reservoir.pdf)". The upload area contains the text "Drag & Drop Files Here" and "Browse Files". A "SUBMIT" button is at the bottom right of the form.

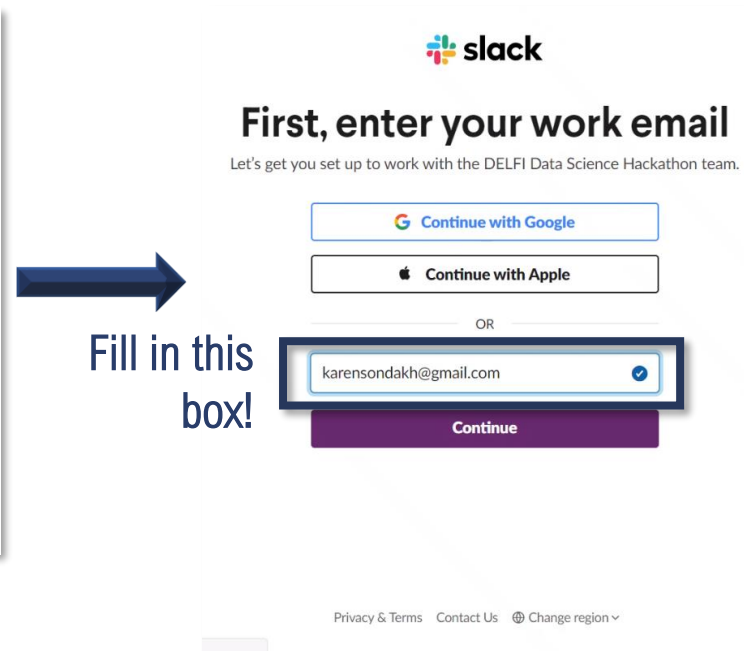
<https://id.slb-delfi-hackathon.com/proposal-submission/>

# Communication Channel

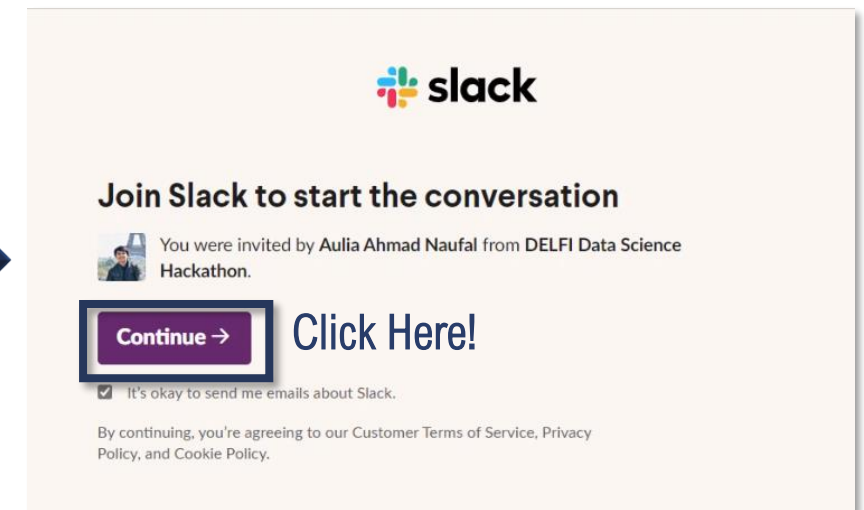
For team leader, check your email,  
there should be an invitation to  
slack



Enter your Email, and click  
*Continue* from here

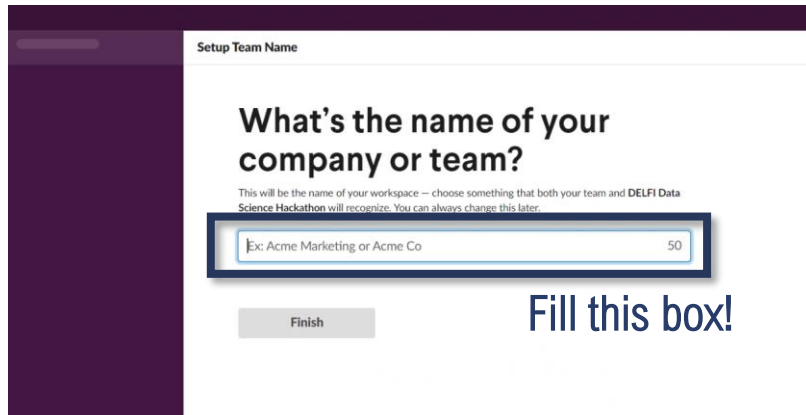


Click *Continue* to proceed to the  
shared Channel



# Communication Channel

Enter your Team Name, and click *Finish*



Setup Team Name

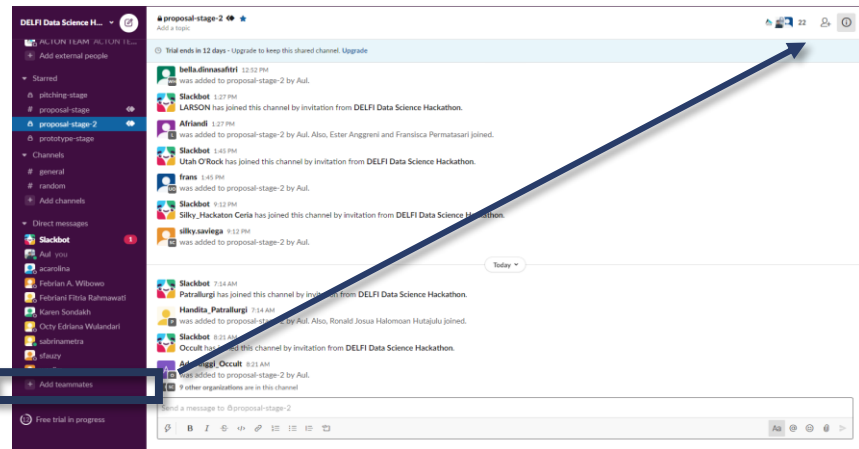
What's the name of your company or team?

This will be the name of your workspace — choose something that both your team and DELFI Data Science Hackathon will recognize. You can always change this later.

Ex: Acme Marketing or Acme Co 50

Finish

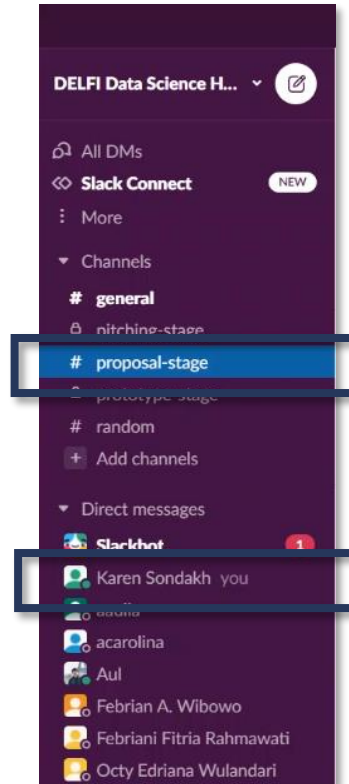
Fill this box!



Add Teammates to your team and add them into the shared channel!

## Ask Questions!

- Direct message *Karen Sondakh* to ask questions
- We will reply max. 24 hours in working hours (Monday – Friday 08:00 – 17:00 WIB) after the question is asked
- Question Format:
  - [Event/ Data/ Dataiku/ Others]: Questions...
- All information (Induction Slides, Data inventory and snapshots, Submission template, Submission link) will be posted in *proposal-stage* channel





# Q&A