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III

There is an improvement in the land boundaries in the congested area using Sam2.1 segmentation

model. I ran one map generated by Jimmy through my routine and anecdotally it is 50%. As each map is different this number can vary significantly from one map to another.

My estimate to put the program on a URL with SAM2.1 in the workflow is 520 person-hours or about 3 months full-time for a single person. This will reduce the handshake problem by 50%. I am using my technical skill-set to estimate the effort. And in this area I am learning.

Putting the program on a URL without SAM2.1 in the workflow (same level of hand-shake problems as in February) will take about 5 man-weeks or about 200 hours. Again using my skill-set.

In the current state, Jimmy's code that generates a clean-file with 50% less handshake problems is meant for a developer to run locally on their machine manually with lots of manual starts and stops. The effort to make the code run locally for me is about 120 person-hours. This includes setup, running and testing the output on my machine locally.

Even with using AI to reduce the handshake problem, the current lift anecdotally is only 50%. With more AI training, the improvements may increase to say 80%. Then you start hitting the 80-20 rule where additional improvements will require a lot more effort, re-architecture, subject matter experts (Z-guys), or feedback from the QA team on what is missing.

Additional training requires more ground truth data and generating those will take 4 hours per map if I use the inventory of 100 additional maps that I have.

Currently, my motivation ebbs and flows on duplicating Jimmy's solution on my machine. I am interested in learning how to break an image into smaller segments, process it through the SAM2.1 engine and stitch the segments back together to form the whole. Also, this will allow me to see the improvements on the handshake problem for any map.

I am conjecturing that by having the solution on the URL, you can send the URL to a prospective investor and impress them. With SAM2.1 in the workflow, the effort is 120+520 hours or 4 months at 40 hours per week.

I need motivation to put so much effort into the project. Maybe we can do a demo over a Zoom call for the investor until we have some firm commitments. If the demo is needed urgently, I will request Jimmy to attend the demo until I have his code running on my local machine.

• • •





Ok

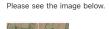
Reg



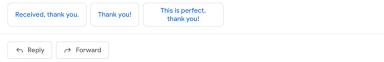
Let me think and get back on the above















Sylvitation: Product Demo @ Mon Jun 9, 2025 10:30am - 11am ()







(saniaywide@gmail.com) Inbox

Product Demo

Mon Jun 9, 2025 2:30pm - 3pm (UTC)



Dhananjay Agarwal 9 Jun to me ~



When

Monday Jun 9, 2025 · 10:30am - 11am (Eastern Time - New York)

Guests

Dhananiay Agarwal - organizer sanjaywide@gmail.com

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Reply for sanjaywide@gmail.com

No Yes

Mavbe

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ID: 85278271922 passcode: 752849

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Meeting host: dan.agarwal@gmail.com

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t9ySnZJMo4KD4nvkrLyPuzQ0zabOWj .1&ist=2

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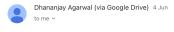






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Invitation: Product Demo and Discussion @ Mon May 26, 2025 9:30pm - 10:30pm (EDT) (sanjaywide@gmail.com)



Product Demo and Discussion

Tue May 27, 2025 1:30am - 2:30am (UTC)



Dhananjay Agarwal 26 May

to me, arora mausam >

to me, arora.mausam



When

Monday May 26, 2025 \cdot 9:30pm - 10:30pm (Eastern Time - New York)

Guests

Dhananjay Agarwal - organizer sanjaywide@gmail.com arora.mausam@gmail.com

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Yes No

Maybe

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ID: 84549412951 passcode: 335521

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Joining notes

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Meeting host: dan.agarwal@gmail.com

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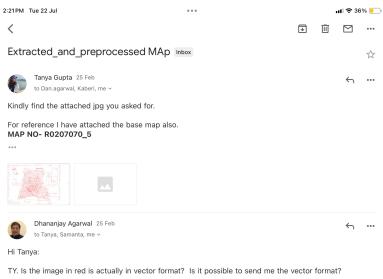
invite.ics



ics







Dhananjay

Sent from my iPhone

On Feb 24, 2025, at 9:49 PM, Tanya Gupta < tanyagupta8942@gmail.com > wrote:

<extracted.jpg> <R0207070_5.jpg>

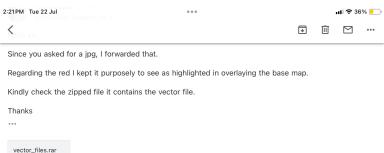


Hello sir,

Since you asked for a jpg, I forwarded that.









Sent from my iPhone

🔓 rar

On Feb 25, 2025, at 3:01AM, Tanya Gupta <<u>tanyagupta8942@gmail.com</u>> wrote:



Hi Tanya:

Thanks for sending me the vector files. Both the methodologies use different approaches to generate the vector outputs and both face similar challenges of "handshakes" of the Bengali Plot Numbers. The distortions by the handshakes manifest in different ways in each of the processes. In mine, it distorts the lines and in the sample you sent me it creates additional branches. By handshakes I mean the Bengali letter touching the wall. My process doesn't use ArcGIS (ESRI proprietary technology) and is 100% homegrown technology using open-source software.

While we can move along the path of ArcGIS and do additional validations, we need to build our product from the ground up. For the time being let's put additional testing in the ESRI route on hold, and focus on the handshake problem. That will give me more rewards for our efforts. Towards that I have created





a folder on Google Drive (https://drive.google.com/drive/folders/1qPce1lmR5krKbfSq8C9qc2O8_Goa3d5k/usp=sharing) that contains pairs of file for 11 maps.

Each pair has an isolate_target file and an isolated file. The isolated file has the complete plot numbers where as the isolate_target file has only the Bengali letters touching the boundaries. Both are raster files. I use the isolate target file in my workflow and the handshakes distort the vector lines.

The problem is how can we remove these handshakes? Let's focus on this problem. This effort will be useful in both the ArcGis process if we decide to use that route at a later time.

Is machine learning the best solution for the handshake problem? One experiment I want to try out is to use CNN tools. My understanding is that for CNN we need noisy and truth data, both, in raster form. We train the model using raster noisy data and truth data. The truth data can come from exporting the Plot layer from the Autocad or shape files of maps already vectorized by our company. The noisy data can come from LM v1.1 program in debug mode. We will run the older files through LM v1.1. This process will help us generate training data very quickly. In this experiment, the output is still a raster file subject to further processing.

- Q1. Please share your thoughts on the proposed experiment?
- Q2. For truth data, can we write a script that can automatically generate raster images of plot boundaries from either AutoCad or Shape files? This will generate Truth Data quickly rather than opening the file and exporting the boundary layer manually.
- Q3. Assuming you like the proposed experiment and want to execute it, can you tell me what you need?

I am hoping that Atanu and you can run this experiment and share your findings when I return from Singapore. Look forward to your response.

Thank you, Dhananjay

2:22 PM Tue 22 Jul



11







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Dhananjay Agarwal 25 Feb

to Tanva, dsantanu1989, Samanta, me, kazihifajat92 v

∽ ..

Missed a key point on Truth Data. The vector form will have to be converted to Raster form for Machine Learning.





Tanya Gupta 26 Feb to Dhananiav. dsantanu1989. Samanta. me. kazihifaiat92 v



Thank you for sharing your detailed insights and the dataset on Google Drive. I have reviewed the challenges regarding the "handshakes" of Bengali plot numbers, and I completely agree that focusing on this issue will be highly rewarding. The distortions caused by these handshakes—either in the form of additional branches or line distortions—are crucial to address before scaling up vectorization efforts.

Thoughts to the Suggested Experiment

It's a great concept that you're using **Convolutional Neural Networks (CNN)** to solve the handshake problem. CNNs are ideal for identifying patterns in picture-based data, and the training of deep learning models in image processing tasks using **noisy-truth pairings is a perfect fit.**

A structured dataset for training will be produced by the ability to construct truth data from pre-existing vectorized maps and noisy data using LM v1.1 debug mode. Our model will be able to distinguish between boundaries and distortions brought on by Bengali characters touching the walls because of this technique. While this experiment will still yield raster output, it will considerably refine the input for vectorization, making future processing smoother.

Automating Truth Data Generation

Regarding the extraction of truth data, yes, we are actively working that can automate the process. Instead of manually exporting the boundary layer, we seek to design a workflow that programmatically extracts and converts the boundary information into **vector format**. This will improve training data creation efficiency and drastically cut down on manual labor.

Next Steps & Resource Needs

We are entirely committed to conducting this experiment. We are currently determining the precise amount of processing power and data storage required to complete this effectively. To guarantee optimal performance, we will provide you with a thorough description of the hardware and software requirements as soon as possible.

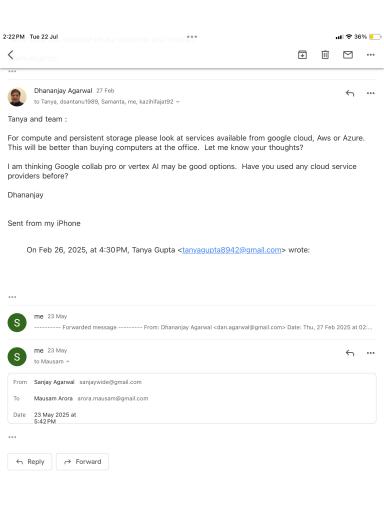
After the first data pipeline is complete, we will **train the baseline model** and examine the results. If successful, we can refine the model further with additional training cycles, hyperparameter tuning, and data augmentation.

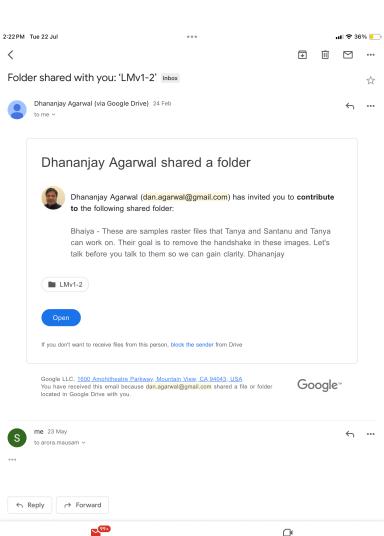
Looking forward to collaborating on this and ensuring a robust solution for the handshake issue.

We'll keep you updated on our progress and findings.











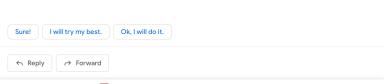
Bhaiya:

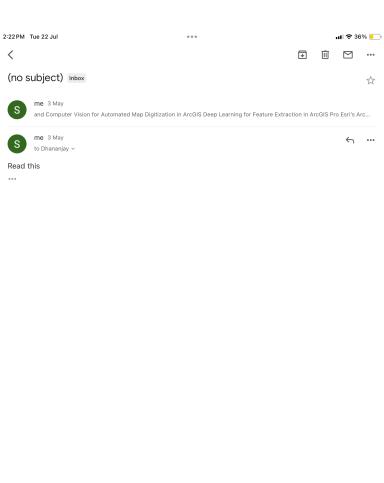
I have 3 pairs of maps that you sent a few months ago. I am in need of additional pairs of maps for Al training. Any number of pairs between 25 and 100 will suffice; however, the higher the pairs you can send the better.

Each pair comprises the input map image and the associated Autocad and shape files that were accepted by the customer. Please exclude the files in the <u>list here</u> as these maps are already earmarked for the Al model. Can you send me the files by May 23rd, 2025?

Thank you, Dhananjay

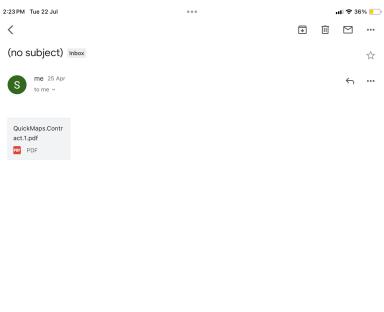


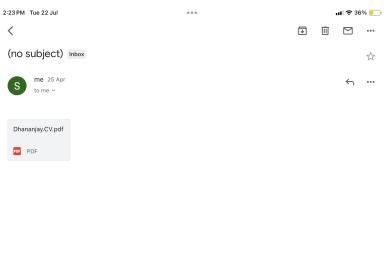


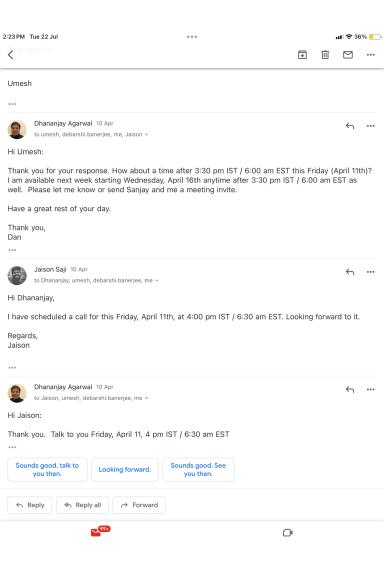


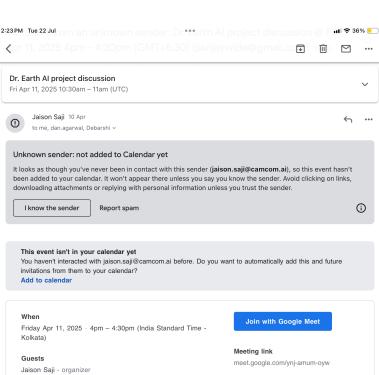
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dan.agarwal@gmail.com saniavwide@gmail.com

Debarshi Banerjee - optional

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More phone numbers

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Vectorization of Cadastral Maps Inbox



ul 🗢 35% 💷



Dear Umesh:

2:23 PM Tue 22 Jul

Sanjay Agarwal asked me to reach out to you. I am heading the R&D team for Dr. Earth Al. In this email I wanted to share the goal of the project so we can get a new perspective on possible solutions.

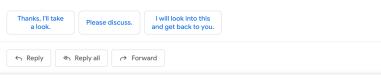
Today, the company is manually processing the cadastral maps (ipg) and generating shape files (shp) to send to the customer. The entire process takes about 15 hours to complete. My goal is to automate this through AI and computer vision to less than 30 minutes. Please see the attached zip file (with a sample map, the interim AutoCad file, and the file Shape files delivered to the customer.

What are your thoughts on how one can solve this? Happy to jump on a Zoom call and discuss further.

Via a separate email, I will share my current developments and the challenges I am facing.

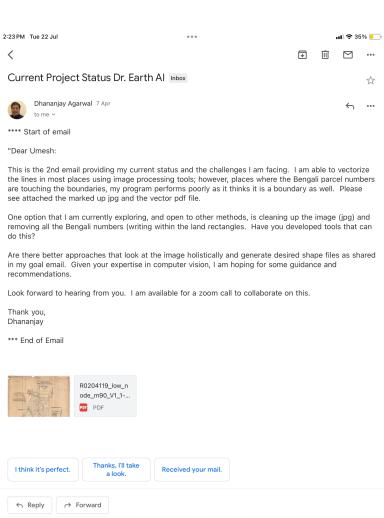
Thank you. Dhananjay Agarwal Head of R&D Dr. Earth Al USA

https://drive.google.com/file/d/1b3-x9t4KlikGGeZiev8T0kX-SciPK--S/view?usp=drive_link











*** Start of Email

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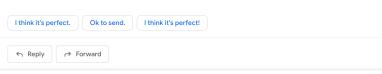
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What are your thoughts on how one can solve this? Via a separate email, I will share my current developments and the challenges I am facing.

Thank you, Dhananjay Agarwal Head of R&D Dr. Earth Al USA

https://drive.google.com/file/d/1b3-x9t4KlikGGeZjey8T0kX-ScjPK--S/view?usp=drive_link

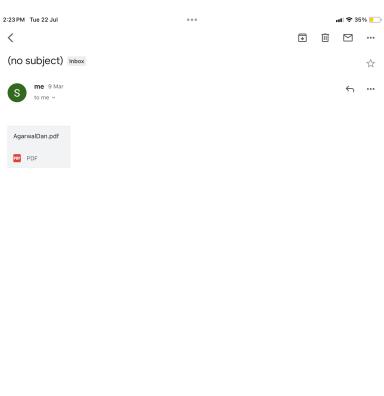
***End of Email"







II 奈 35% ■



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Zoom link Saturday Inbox



Dhananjay Agarwal 8 Mar

 $\underline{https://us06web.zoom.us/j/83681231405?pwd=1edvm1H5Eh2xshP7Mv41jobzfYad34.1}$









₩ III





Invitation: Investors Meeting @ Fri Feb 28, 2025 5:30pm - 6:30pm (GMT+8) (sanjaywide@gmail.com) Inbox



Investors Meeting

Fri Feb 28, 2025 9:30am - 10:30am (UTC)

When

Fri Feb 28, 2025 9:30am - 10:30am (UTC)

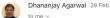
Organiser

Dhananjay Agarwal

Invitees 23

Dhananjay Agarwal Sanjay Agarwal

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Friday Feb 28, 2025 · 5:30pm - 6:30pm (Singapore Standard Time)

Guests

Dhananjay Agarwal - organizer sanjaywide@gmail.com

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Yes No

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passcode: 259186 Joining instructions

Joining notes

Zoom for G Suite Add-On Help

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1HDHVRm0veZeugpo5TYGgS7jcy45ba.1









₩ IIII





Inbox

R& D Standup

Weekly from 11am to 12pm on weekdays from Thu Feb 20 to Fri Feb 28 (UTC)



Dhananjay Agarwal 28 Feb

to me, kazihifajat92, dsantanu1989, samanta.kaberi, tanyagupta8942 v

This event has been updated with a note: "Cancelling. Will schedule as needed."

Changed: time

When CHANGED

Weekly from 7pm to 8pm on weekdays from Thursday Feb 20 to Friday Feb 28 (Singapore Standard Time) Weekly from 7pm to 8pm on weekdays (Singapore Standard Time)

Guests

Dhananiay Agarwal - organizer kazihifajat92@gmail.com dsantanu1989@gmail.com sanjaywide@gmail.com samanta.kaberi@gmail.com tanyaqupta8942@gmail.com View all guest info

RSVP for saniavwide@gmail.com for all events in this series

Yes No Maybe

More options

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Joining instructions

Joining notes

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R& D Standup

Weekly from 11am to 12pm on weekdays from Thu Feb 20 to Fri Feb 28 (UTC)



Dhananjay Agarwal 28 Feb

to me, kazihifajat92, dsantanu1989, samanta.kaberi, tanyagupta8942 v

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Dhananjay Agarwal (via Google Drive) 25 Feb

to me, dsantanu1989, kazihifajat92, samanta.kaberi, tanyagupta8942 v



Dhananjay Agarwal shared a folder



Dhananjay Agarwal (dan.agarwal@gmail.com) has invited you to contribute to the following shared folder:

This is the shared folder for the R&D Team on Google Drive. I uploaded documents here that I have received from the India Team. Let's use this storage for sharing files. Dhananjay

■ Dr.EarthAl-R&D

Open

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Folder shared with you: 'Dr.EarthAl-R&D' Inbox



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Dhananjay Agarwal (via Google Drive) 25 Feb

to me, dsantanu1989, kazihifajat92, samanta.kaberi, tanyagupta8942 v

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■ Dr.EarthAl-R&D

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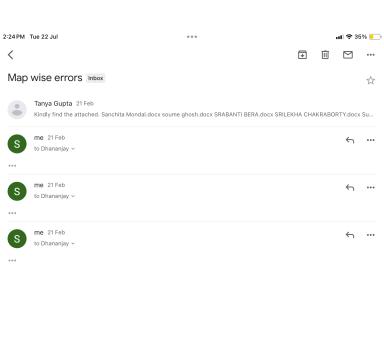


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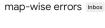












to Dhananjay v



----- Forwarded message ------From: Kazi H <kazihifajat92@gmail.com>

Date: Fri, 21 Feb 2025 at 5:44 PM

Subject: map-wise errors

To: Sanjay Agarwal < sanjaywide@gmail.com >













Mapwise error details Inbox







Atanu De Sarkar 21 Feb Sir, PFA



me 21 Feb

to Dhananjay v

----- Forwarded message ------

From: Atanu De Sarkar < dsatanu1989@gmail.com >

Date: Fri, 21 Feb 2025 at 5:46 PM Subject: Mapwise error details

To: Sanjay Agarwal <sanjaywide@gmail.com>

Sir, PFA.

> maperrors_Susmi ta Dutta.docx W Docs

Antara kundu.docx W Docs

error doc_suvasree.d... W Docs









Folder shared with you: 'LowerNodes-10Maps' Inbox



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Dhananjay Agarwal (via Google Drive) 21 Feb

to me, samanta.kaberi v



Dhananjay Agarwal shared a folder



Dhananjay Agarwal (dan.agarwal@gmail.com) has invited you to contribute to the following shared folder:

Hi Dr. Kaberi:

Please find as a sample 10 files with nodes reduced about 50%. As nodes are reduced curvature becomes more angular. Let me know if this is better than the higher node images?

Thank you, Dhananjay

LowerNodes-10Maps



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Invitation: R&D Standup @ Weekly from 6am to 7am on weekdays (EST) (sanjaywide@gmail.com) Inbox



R& D Standup

Weekly from 11am to 12pm on weekdays from Thu Feb 20 to Fri Feb 28 (UTC)





Dhananjay Agarwal 20 Feb

to me, kazihifajat92, dsantanu1989, samanta.kaberi, tanyagupta8942 v



When

Weekly from 6am to 7am on weekdays (Eastern Time - New

Guests

Dhananjay Agarwal - organizer

kazihifajat92@gmail.com

dsantanu1989@gmail.com

sanjaywide@gmail.com

samanta.kaberi@gmail.com

tanyagupta8942@gmail.com

View all quest info

RSVP for sanjaywide@gmail.com for all events in this series



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More options

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ID: 82451171186 passcode: 639317

Joining instructions

Joining notes

Zoom for G Suite Add-On Help

Meeting host: dan.agarwal@gmail.com

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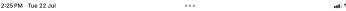
invite.ics



ics







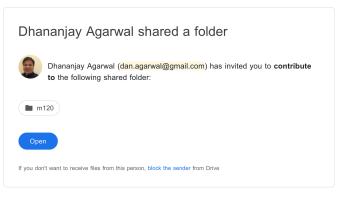












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Dhananjay Agarwal 17 Feb







https://us06web.zoom.us/j/88367359800?pwd=EB5I0VauzGR0LpYrXLEvVUz0Y5ThbM.1





₩





Invitation: GDrive Files @ Mon Feb 17, 2025 7:15am - 8am (EST) (sanjaywide@gmail.com) Indox



GDrive Files

Mon Feb 17, 2025 12:15pm - 1pm (UTC)



Dhananjay Agarwal 17 Feb



When

Monday Feb 17, 2025 \cdot 7:15am – 8am (Eastern Time - New York)

Guests

Dhananjay Agarwal - organizer sanjaywide@gmail.com

View all guest info

Reply for sanjaywide@gmail.com



More options

Join Zoom Meeting

us06web.zoom.us/j/87608824614?pw...

ID: 87608824614 passcode: 297503

Joining instructions

Joining notes

Zoom for G Suite Add-On Help

Meeting host: dan.agarwal@gmail.com

Join Zoom Meeting:

https://us06web.zoom.us/j/87608824614?

w9NxC898NtdH9GfVjWkj4i8PGR8Bs5.1

Invitation from Google Calendar

You are receiving this email because you are subscribed to calendar notifications. To stop receiving these emails, go to Calendar settings, select this calendar, and change "Other notifications".

Forwarding this invitation could allow any recipient to send a response to the organizer, be added to the guest list, invite others regardless of their own invitation status, or modify your RSVP. Learn more

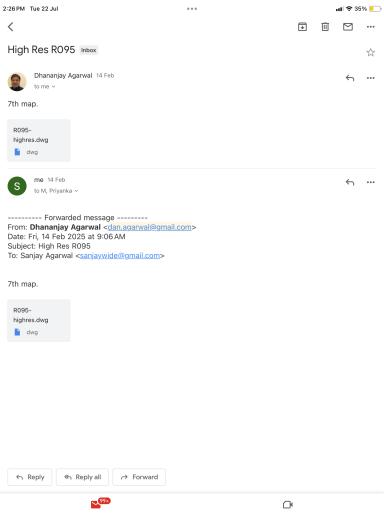
invite.ics

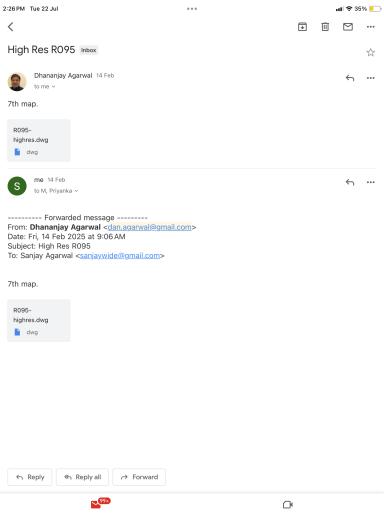


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Invitation: sanjay Bhaiya<> Dhananjay @ Thu Feb 13, 2025 10pm - 10:45pm (EST) (sanjaywide@gmail.com) Inbox



sanjay Bhaiya<> Dhananjay

Fri Feb 14, 2025 3am - 3:45am (UTC)



Dhananjay Agarwal 14 Feb

to me v



When

Thursday Feb 13, 2025 · 10pm - 10:45pm (Eastern Time -New York)

Guests

Dhananjay Agarwal - organizer sanjaywide@gmail.com

View all quest info

Reply for sanjaywide@gmail.com

Yes No Maybe

More options

Join Zoom Meeting

us06web.zoom.us/j/85461097611?pw...

ID: 85461097611 passcode: 543434

Joining instructions

Joining notes

Zoom for G Suite Add-On Help

Meeting host: dan.agarwal@gmail.com

Join Zoom Meeting:

https://us06web.zoom.us/j/85461097611?

h0lmiooYbaaKRQ3Gyl9vjbqGcqOx5y.1

Invitation from Google Calendar

You are receiving this email because you are subscribed to calendar notifications. To stop receiving these emails, go to Calendar settings, select this calendar, and change "Other notifications".

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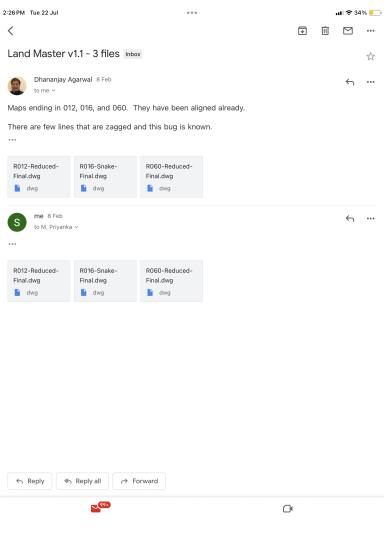
invite.ics



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https://us06web.zoom.us/j/84879788461?pwd=UsOH7VrXtfwof8TCJMJcBSBLKlsyNx.1

Dhananjay Agarwal 8 Feb



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Invitation: Demo @ Fri Feb 7, 2025 6:15am - 7am (EST) (sanjaywide@gmail.com) Inbox



Demo

Fri Feb 7, 2025 11:15am - 12pm (UTC)



to me, privankasarkar20 v

Dhananjay Agarwal 7 Feb



When

Friday Feb 7, 2025 · 6:15am - 7am (Eastern Time - New York)

Guests

Dhananjay Agarwal - organizer sanjaywide@gmail.com priyankasarkar20@gmail.com

View all quest info

Reply for sanjaywide@gmail.com

Yes No Maybe

More options

Join Zoom Meeting us06web.zoom.us/i/85984432422?pw...

ID: 85984432422

passcode: 603646

Joining instructions Joining notes

Zoom for G Suite Add-On Help

Meeting host: dan.agarwal@gmail.com

Join Zoom Meeting:

https://us06web.zoom.us/j/85984432422?

RsdZOaR2vxVFCHeOquNFBo0F8t0ejs.1

Invitation from Google Calendar

You are receiving this email because you are subscribed to calendar notifications. To stop receiving these emails, go to Calendar settings, select this calendar, and change "Other notifications".

Forwarding this invitation could allow any recipient to send a response to the organizer, be added to the guest list, invite others regardless of their own invitation status, or modify your RSVP. Learn more

invite.ics



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Invitation: Update @ Wed Feb 5, 2025 8:45am - 9:30am (EST) (sanjaywide@gmail.com) Indox



Update



When

to me ~

Wednesday Feb 5, 2025 · 8:45am - 9:30am (Eastern Time - New York)

Guests

Dhananjay Agarwal - organizer sanjaywide@gmail.com

View all guest info

Reply for sanjaywide@gmail.com

	Yes	No	Maybe	
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More options

Join Zoom Meeting

us06web.zoom.us/j/88334988508?pw...

ID: 88334988508 passcode: 503397

Join by phone

(US) +1 309-205-3325

passcode: 503397

Joining instructions

Joining notes

Zoom for G Suite Add-On Help

Meeting host: dan.agarwal@gmail.com

Join Zoom Meeting:

https://us06web.zoom.us/j/88334988508? pwd=bOmTPCi1l918MLU9IR64xl8ajyja6t

Invitation from Google Calendar

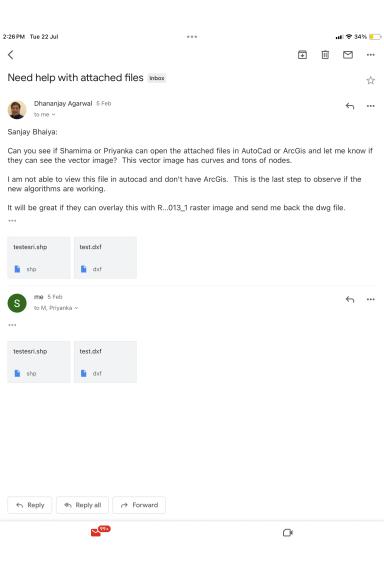
You are receiving this email because you are subscribed to calendar notifications. To stop receiving these emails, go to Calendar settings, select this calendar, and change "Other notifications".

Forwarding this invitation could allow any recipient to send a response to the organizer, be added to the guest list, invite others regardless of their own invitation status, or modify your RSVP. Learn more

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Dhananjay Agarwal 3 Feb

Dhananjay Agarwal is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting

https://us06web.zoom.us/j/84324479788?pwd=A17NDaZxoESAxtzpYVczvx0V6yvM7m.1

Meeting ID: 843 2447 9788

Passcode: 083002

One tap mobile

- +13092053325,,84324479788#,,,,*083002# US
- +13126266799,,84324479788#,,,,*083002# US (Chicago)

Dial by your location

- · +1 309 205 3325 US
- · +1 312 626 6799 US (Chicago)
- +1 646 558 8656 US (New York)
- · +1 646 931 3860 US
- +1 301 715 8592 US (Washington DC)
- · +1 305 224 1968 US
- · +1 253 215 8782 US (Tacoma)
- +1 346 248 7799 US (Houston)
- · +1 360 209 5623 US
- · +1 386 347 5053 US
- · +1 507 473 4847 US
- · +1 564 217 2000 US
- · +1 669 444 9171 US
- · +1 689 278 1000 US · +1 719 359 4580 US
- +1 720 707 2699 US (Denver)
- · +1 253 205 0468 US

Meeting ID: 843 2447 9788

Passcode: 083002

Find your local number: https://us06web.zoom.us/u/kb43pdAmsR

When

Sunday Feb 2, 2025 · 8:45pm - 9:15pm (Eastern Time - New York)

Location













Dhananjay Agarwal 30 Jan to me, priyankasarkar20 v

Dhananjay Agarwal is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting

https://us06web.zoom.us/j/83030201115?pwd=pc4QNIHeQI1QCmWBXTVUAz5LFkQqcp.1

Meeting ID: 830 3020 1115 Passcode: 886894

One tap mobile

+13126266799,,83030201115#,,,,*886894# US (Chicago)

+16465588656,,83030201115#,,,,*886894# US (New York)

Dial by your location

- · +1 312 626 6799 US (Chicago)
- · +1 646 558 8656 US (New York)
- · +1 646 931 3860 US
- · +1 301 715 8592 US (Washington DC)
- · +1 305 224 1968 US
- · +1 309 205 3325 US
- · +1 669 444 9171 US
- · +1 689 278 1000 US
- · +1 719 359 4580 US · +1 720 707 2699 US (Denver)
- · +1 253 205 0468 US
- +1 253 215 8782 US (Tacoma)
- +1 346 248 7799 US (Houston)
- · +1 360 209 5623 US
- · +1 386 347 5053 US
- +1 507 473 4847 US
- · +1 564 217 2000 US

Meeting ID: 830 3020 1115

Passcode: 886894

Find your local number: https://us06web.zoom.us/u/kcYkyA1BXS

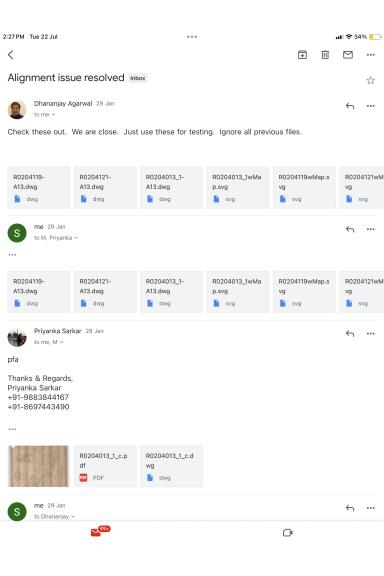
When

Thursday Jan 30, 2025 · 5:30am - 6:30am (Eastern Time - New York)

Location





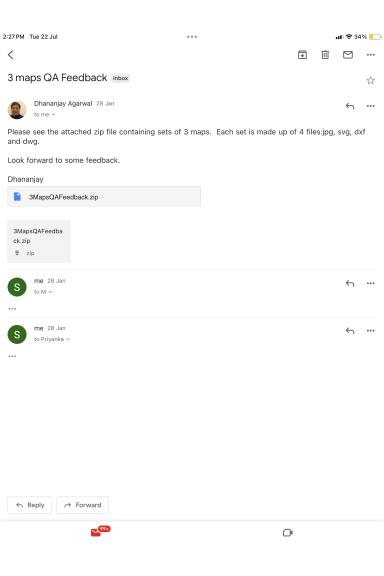




https://us06web.zoom.us/j/84722646373?pwd=MPfePEjlH9pMNhGiQzWz5gmCo1r6Tq.1

Dhananjay Agarwal 29 Jan





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Vector files overlaid with image Inbox

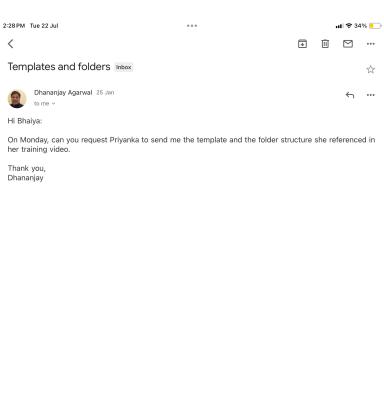
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These files are provided by Matt.

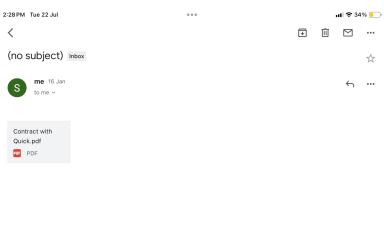










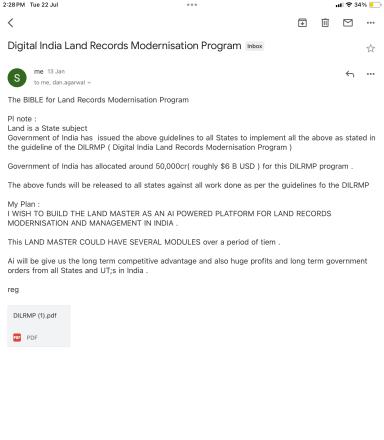




2013 Autocad format Inbox

Dhananjay Agarwal 13 Jan to Priyanka, me v

119-clip2output-2013.dwg dwg

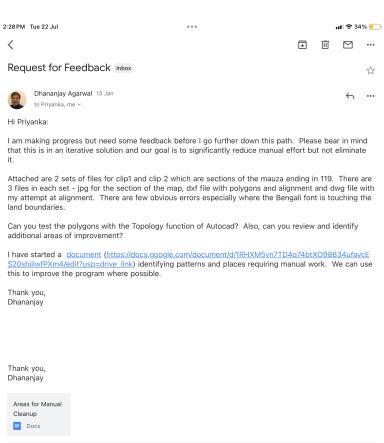




→ Forward

← Reply



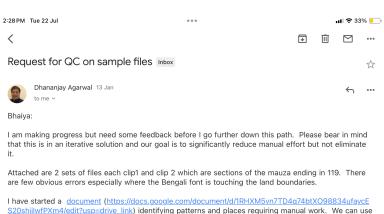




Dhananjay Agarwal 13 Jan
to Priyanka, me >

Oops. Here are the attachments.



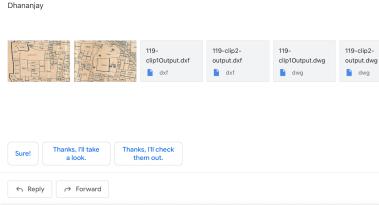


this to improve the program where possible. Can you have Priyanka and Samar review and identify additional areas of improvement? They will have to

Also, can you request Priyanka to test the polygons with the Topology function of Autocad?

Thank you,

Overlay the







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FYI

to me ~

----- Forwarded message -----

From: Dhananjay Agarwal < dan.agarwal@gmail.com >

Date: Wed, Jan 1, 2025 at 4:43 PM Subject: Re: Thanks for the meeting... To: Phil Ponce < Phil@emsol.com>

Cc: Marty Shaeffer < Marty@emsol.com >, Vedran Stupar < Vedran.Stupar@emsol.com >

Hi Phil:

- 1. Digitize Drawings Brute force method ??? hrs
- · 2. Final poly build and cleanup 20-30 minutes
- . 3. Annotation 1-2 hours (we may automat this as well)

On the first bullet point, I wanted to share the results of my work. My goal was to extract only lines from the image and make them black and smooth. Using QGIS, I was able to clean up the image file (clip by mask, convert to binary, get the pixels of darker color by setting contrast to clip min-max, and then using a sieve to remove few white speckles) and used it for input into Scan2CAD. In Scan2CAD I cleaned it up further by using Speckles of size 63 (max allowed, this removed a lot of land numbers in Bengali) followed by Thicken Line and Smooth. The result is attached for jpg ending in 119. When converted to vector in Scan2CAD using my saved presets (see attached), the results were good, not perfect. The cleanup process can be further improved as QGIS has a raster calculator and access to GRASS plugin with additional options. Although I haven't tested it out, Google has Documents AI with Bengali OCR. What we will have to test and try is identifying the Bengali letters in the image and replacing all the associated pixels with white during the cleanup phase. Not sure if there is an API for that. If we can pull that off, we will have a very good cleaned up image.

Can you please have Marty look into the jpg and convert it to Line Vector in Scan2Cad using the attached presets and then try to convert to Polygons using his tools? What I am thinking is your team owns item number 2 and consults me on item 1 and 3?

Look forward to your response.

Dan

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