



23 أيلول/ سبتمبر 2024

الرقم المرجعي: 15583/2024/SI/ETR/CRS-125

عدد المرفقات: 3 (بالإنكليزية فقط)

الموضوع: حلقة عمل باللغة العربية عن الجيل الثالث من سواتل الأرصاد الجوية: تعزيز التنبؤ بالطقس باستخدام تكنولوجيا الجيل التالي من السواتل

الإجراء المطلوب: للعلم، واتخاذ ما يلزم من إجراءات حسب الاقتضاء، وموافقتنا بالترشيحات في موعد غايته 1 تشرين الثاني/ نوفمبر 2024

تحية طيبة وبعد،

يسرني أن أحيطكم علماً بأنه في سبيل دعم تنمية القدرات في مجال خدمات التنبؤ بالطقس باستخدام السواتل في المرافق الوطنية للأرصاد الجوية والهيدرولوجيا (NMHSs) في البلدان الناطقة باللغة العربية، يسر مكتب التعليم والتدريب (ETR) بالمنظمة العالمية للأرصاد الجوية - بالتعاون مع المديرية العامة للأرصاد الجوية التابعة لهيئة الطيران المدني في سلطنة عُمان، والمنظمة الأوروبية لاستخدام سواتل الأرصاد الجوية "يومتسات" (EUMETSAT) - الإعلان عن عقد حلقة عمل باللغة العربية عن الجيل الثالث من سواتل الأرصاد الجوية: تعزيز التنبؤ بالطقس باستخدام تكنولوجيا الجيل التالي من السواتل.

وتهدف حلقة العمل هذه إلى تعزيز معارف أخصائيي الأرصاد الجوية ومحليي البيانات الساتلية وصقل مهاراتهم، من خلال تدريبهم نظرياً وعملياً على استخدام تكنولوجيات الجيل الثالث من السواتل الثابتة بالنسبة للأرض. وحلقة العمل هي دورة تدريبية قائمة على نهج التعلم المختلط، وستُقدَّم على مرحلتين:

- المرحلة الإلكترونية، في المدة من 1 إلى 9 كانون الأول/ ديسمبر 2024، وتتناول المبادئ الرئيسية لتفسير البيانات الساتلية، ونواتج القنوات الملونة بالألوان الأحمر والأخضر والأزرق (RGB)، وتعرض دراسات للحالة. وسيُطلب من المشاركين في هذه المرحلة إعداد وتقديم دراسة حالة موجزة.
- المرحلة الحضورية، في المدة من 26 إلى 30 كانون الثاني/ يناير 2025، في مسقط بسلطنة عُمان، وستقدم هذه المرحلة تدريباً عملياً على تحليل البيانات الساتلية، وإحاطات يومية عن الطقس، وتطبيقاً عملياً للأدوات المفتوحة المصدر الخاصة بالمنظمة الأوروبية لاستخدام سواتل الأرصاد الجوية (يومتسات).

وستتيح حلقة العمل الفرصة أمام المشاركين لمعرفة التطورات الرئيسية التي استحدثت في الجيل الثالث من سواتل الأرصاد الجوية (MTG) وتميّزها عن الجيل الثاني من هذه السواتل (MSG)، ولتطبيق تحليل البيانات الساتلية في سيناريوهات واقعية من العالم الحقيقي، والتعرف على أدوات الذكاء الاصطناعي والتعلم الآلي، التي تُعزّز التنبؤ بالطقس. ويرد في المرفقان الأول والثاني بهذه الرسالة التعميمية وصف لشكل حلقة العمل، ونتائج التعلم المرجوة منها، وإجراءات تنفيذها.

إلى: الممثلين الدائمين لأعضاء المنظمة من البلدان الناطقة بالعربية في الاتحادات الإقليمية الأول والثاني والسادس

صورة إلى: المستشارين الهيدرولوجيين

ويسرني أن أدعوكم إلى تقديم نموذج الطلب (في المرفق الثالث) للمرشحين المؤهلين للمشاركة في حلقة العمل. ويجب أن تتضمن الطلبات المُقدَّمة خطاباً تحفيزياً، والسيرة الذاتية، والمؤهلات المعتمدة، وخطاب ترشيح من الممثل الدائم المعني، على أن تُرسل الطلبات إلى البريد الإلكتروني: manal.alhashmi@caa.gov.om، والبريد الإلكتروني: tra@wmo.int، في موعد غايته 1 تشرين الثاني/ نوفمبر 2024. ولن يُلتفت إلى أي طلبات ترد بعد هذا التاريخ.

وأشدد في هذا الصدد على أن جميع المرشحين، الذين وقع عليهم الاختيار للمشاركة في المرحلة الحضورية، يجب عليهم المشاركة في كلتا المرحلتين الإلكترونية والحضورية.

وألفت انتباهكم الكريم إلى أننا نشجّع الأعضاء على تحمّل نفقات المشاركين الذين يرشحونهم للمشاركة في المرحلة الحضورية في مسقط، سلطنة عُمان، ومع ذلك تُعرب المنظمة عن استعدادها لدعم مشارك واحد من كل عضو استناداً إلى اختيار وترشيح الممثل الدائم لهذا العضو.

وأغتنم هذه المناسبة كي أؤكد لكم التزامي الثابت بتنفيذ الأنشطة المتصلة بتنمية القدرات دعماً لتطوير الكفاءات، شاكرةً لكم تعاونكم المستمر في تحقيق هذا المسعى.

وتفضلوا بقبول فائق الاحترام،



البروفيسورة سيلبستي ساولو
الأمينة العامة

MTG Arabic Workshop: Enhancing Weather Forecasting with Next-Generation Satellite Technology

Civil Aviation Authority, Directorate General of Meteorology,
Centre of Excellence for Satellite Applications Muscat
Sultanates of Oman

1	Host Member	Sultanates of Oman
2	Host institution(s)	Civil Aviation Authority's, Directorate General of Meteorology, VLab Centre of Excellence for Satellite Applications – Muscat Oman
3	Website	Caa.gov.om Met.gov.om Coemct.met.gov.om
4	Location(city) of Institution(s)	Muscat, Sultanates of Oman
5	Address of Institution	Muscat, Sultanate of Oman P.O. Box: 1, P.C. 111
7	Course type	Blended Learning: - Online phase - In-person phase
8	Main course content	<p>For the online programme:</p> <ul style="list-style-type: none"> • Principles of Satellite, channels and RGBs • Key Advancements from MSG to MTG • Case studies <p>For the in-person programme:</p> <ul style="list-style-type: none"> • Main weather systems around the Middle East • Principles of Satellite channels and RGBs ("Very simple") • Practical sessions on Satellite Principles • Daily weather briefings • Cloud classification and atmospheric/ground feature detection • Transition from MSG to MTG satellites • Cloud classification applications • Interpretation of Low-Level Atmosphere • Mid and upper atmosphere interpretation • Convection and thunderstorms systems • LEO satellites for better GEO satellite usage • Lightning Imager Principles and applications • Dust and aerosols monitoring • NWP and satellites

		<ul style="list-style-type: none"> • AI and ML applications • Role of satellites in risk assessment (IBF) • Hands-On Guide to EUMETSAT Data Access Services
9	Duration of study	<p>Online phase: 1 week and 2 days</p> <p>Introductory refreshment course (1–5 Dec 2024)</p> <p>Presenting Case studies from students (8 – 9 Dec 2024)</p> <p>In-person phase: 1 week</p> <p>(26 – 30 Jan 2025)</p>
10	Course start dates	<p>- Online phase: 1 Dec 2024</p> <p>- In-person phase: 26 Jan 2025</p>
11	Target Region and Members	Arabic speaking countries
12	Basic Requirements	<ul style="list-style-type: none"> • Forecasters with three years of operational experience involving the daily the use of satellite data. • Basic knowledge of satellite weather systems and data interpretation. • Experience with Geographic Information Systems (GIS) and satellite data processing. • Familiarity with numerical weather products, weather forecasting and remote sensing tools.
13	Language	Arabic
14	Number of awards	Up to 25 participants
15	Application form	Mandatory
16	Admission from institution	Mandatory
17	Applications closing date	WMO: 1 November 2024
19	Contact info	Email to tra@wmo.int , with copy to manal.alhashmi@caa.gov.om

**Civil Aviation Authority, Directorate General of Meteorology,
Centre of Excellence for Satellite Applications Muscat
Sultanate of Oman**

**MTG Arabic Workshop: Enhancing Weather Forecasting with Next-Generation
Satellite Technology
2024–2025**

Course description

The WMO Education and Training Office, in collaboration with the Civil Aviation Authority's Directorate General of Meteorology, the Centre of Excellence for Satellite Applications, Sultanate of Oman, and with support from EUMETSAT, is organizing the MTG Arabic Workshop: **Enhancing Weather Forecasting with Next-Generation Satellite Technology**. This Arabic-language workshop, designed for Arabic speaking countries, will be held in Muscat, Sultanate of Oman.

This blended-learning course introduces participants to the latest advancements in satellite meteorology, focusing on the transition from MSG to MTG satellites. The online phase covers key principles of satellite data interpretation, channels and RGBs, and case studies, while the in-person phase provides practical applications such as daily weather briefings, cloud classification, lightning imager applications, and AI/ML integration in meteorology.

Participants will have the opportunity to gain hands-on experience with EUMETSAT data services and apply the learned principles to real-world forecasting scenarios, benefiting their organizations.

Course format

This will be a blended-learning course, consisting of an online phase followed by an in-person phase.

The online phase will run from 01 to 09 December 2024, where participants will engage with key principles of satellite data interpretation, case studies, and open-source tools—particularly those from EUMETSAT. During this phase, participants are required to prepare and present short case study. To ensure active participation, cameras must be ON during all online sessions, and to make the session runs smoothly, participants are required to join via PC, not phones or tablets.

The in-person phase will take place from 26 to 30 January 2025 in Muscat, Oman, focusing on practical applications, hands-on training sessions, and daily weather briefings.

Participants must demonstrate satisfactory attendance and progress during both phases, completing tasks and quizzes on time. All tools will be provided through online and open-source platforms, with no need for additional software installations. Participants are required to bring their own laptops for the hands-on practical sessions during the in-person phase.

Expected Learning outcomes

By the end of the course, participants will have successfully achieved the following outcomes:

1. Understand the advancements in meteorological satellite technology, particularly the transition from MSG to MTG satellites;
2. Apply the principles of satellite data interpretation, including channels and RGBs and their applications in weather forecasting;
3. Utilize EUMETSAT open-source tools for satellite data processing and analysis;
4. Get familiar with the new technologies and enhancements in the MTG satellite system, including its improved data capabilities and lightning imager tools;
5. Identify key weather systems and phenomena across the Middle East and interpret them using satellite data;
6. Apply hands-on skills for using satellite data in daily weather briefings and forecasting, including cloud classification and lightning imager tools;
7. Present a case study demonstrating the application of satellite principles in real-world forecasting scenarios;
8. Integrate AI and machine learning techniques in satellite data analysis and risk assessment;
9. Hands-On Guide to EUMETSAT Data Access Services.

Competencies attained and certificates issued

After successfully completing the course, participants will receive a certificate acknowledging the knowledge and skills gained during the MTG Arabic Workshop. This certificate will outline the following:

1. A solid understanding of interpreting and utilizing MTG satellite data for weather forecasting;
2. A foundational knowledge of satellite data analysis, including channels and RGBs and lightning imagery tools;
3. Familiarity with the latest advancements and technologies in the MTG satellite system;
4. Experience with EUMETSAT open-source tools and their application in daily forecasting operations;
5. An introduction to integrating satellite data with AI and machine learning techniques for enhanced weather analysis.

The course content will provide participants with the needed skills to apply advanced satellite-based forecasting techniques within their organizations.

Target audience

The workshop is aimed at meteorologists and weather forecasters from NMHSs in Arabic speaking countries. It is particularly suitable for:

- Specialists and staff involved in weather forecasting and weather satellite user
- Midlevel professionals looking to enhance their knowledge of the latest MTG satellite technologies

Instructors

The course will be led by trainers from the Centre of Excellence for Satellite Applications Muscat. Additionally, subject matter experts from EUMETSAT and other relevant organizations will be brought in to provide specialized instruction on specific topics related to enhancing weather forecasting with third-generation geostationary satellite technology.

Working language

The course will be conducted primarily in Arabic, with some light English-Arabic discussions. No full translation into other languages will be offered.

Entry requirements

- **Involvement in Meteorology or Satellite Data Analysis: Applicants** should be actively engaged in weather forecasting, satellite data analysis, or related meteorological services.
- **Language Skills:** Proficiency in Arabic is required, with a basic understanding of English for light discussions.
- **Proof of Experience:** Applicants must provide a CV and qualifications to verify their experience and skills.

Work Experience: Relevant work experience in meteorology, satellite technology, or related fields is preferred.

Useful resources to prepare for the course

Participants are advised to have access to a laptop or desktop computer equipped with Microsoft Office or an equivalent suite (word processor, presentation software, etc.). The device should have good memory capacity and storage (an external storage device is recommended). A laptop is preferable, as it can be used during the face-to-face phase of the course.

Procedure for application

The applications thus must include:

- A letter of motivation in Arabic limited to 200 words
- A CV specifying relevant certified qualifications
- Application form with the endorsement of the Permanent Representative

All applications will be handled according to the protection of private information requirements.

Application for consideration should be sent to: tra@wmo.int with cc to manal.alhashmi@caa.gov.om.

Clearly marked as subject of the email: [**CRS 125**] **MTG Arabic Workshop: Enhancing Weather Forecasting with Next-Generation Satellite Technology.**

Deadlines for application: **1 Nov 2024**

APPLICATION FORM

Civil Aviation Authority, Directorate General of Meteorology,
Centre of Excellence for Satellite Applications Muscat
Sultanates of Oman

MTG Arabic Workshop: Enhancing Weather Forecasting with Next-Generation
Satellite Technology
2024–2025

Note: Please read the Notes and Instructions on the last page before completing this application form

A. PERSONAL	
1. First name	
2. Family name	
3. Country	
4. Date of birth (DD/MM/YYYY)	
5. Gender	M / F
6. Passport number	
7. Passport validity	
8. Do you have a disability	Yes / No
If yes, please specify	
9. Permanent home address	
(number, street, postal code, town)	
10. Telephone (mobile)	
11. Email	
12. Professional contact	
Name	
Telephone (office)	
Professional links	
13. Would you request financial assistance to participate at the course? Yes / No	

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B. GENERAL			
1. Give details of working experience in meteorology			
Name of organization	Starting and end date	Brief description of role and responsibilities	Reason for leaving
2. Write a brief statement setting out clearly why you have chosen this course and how you intend to use it after graduation			

I declare that to the best of my knowledge all the information on this form is true and correct.

Signature

Date

C. PERMANENT REPRESENTATIVE ENDORSEMENT
--

Signature

Date

Notes and Instructions:

Please read these notes and instructions carefully before completing this application form. Be sure to read every section and that the information you provide is accurate.

- 1. Applications received after the date of 1 Nov 2024 will not be considered.**
- 2. Applications received without the endorsement of the Permanent Representative will not be considered.**
3. Incomplete application forms will not be considered.
4. Closing dates for the application dates are published and will be strictly adhered to.
5. A copy of the passport document must be included in the application.
6. Candidates requesting WMO support will be contacted by email. Please ensure your contact details are correct and clearly written.