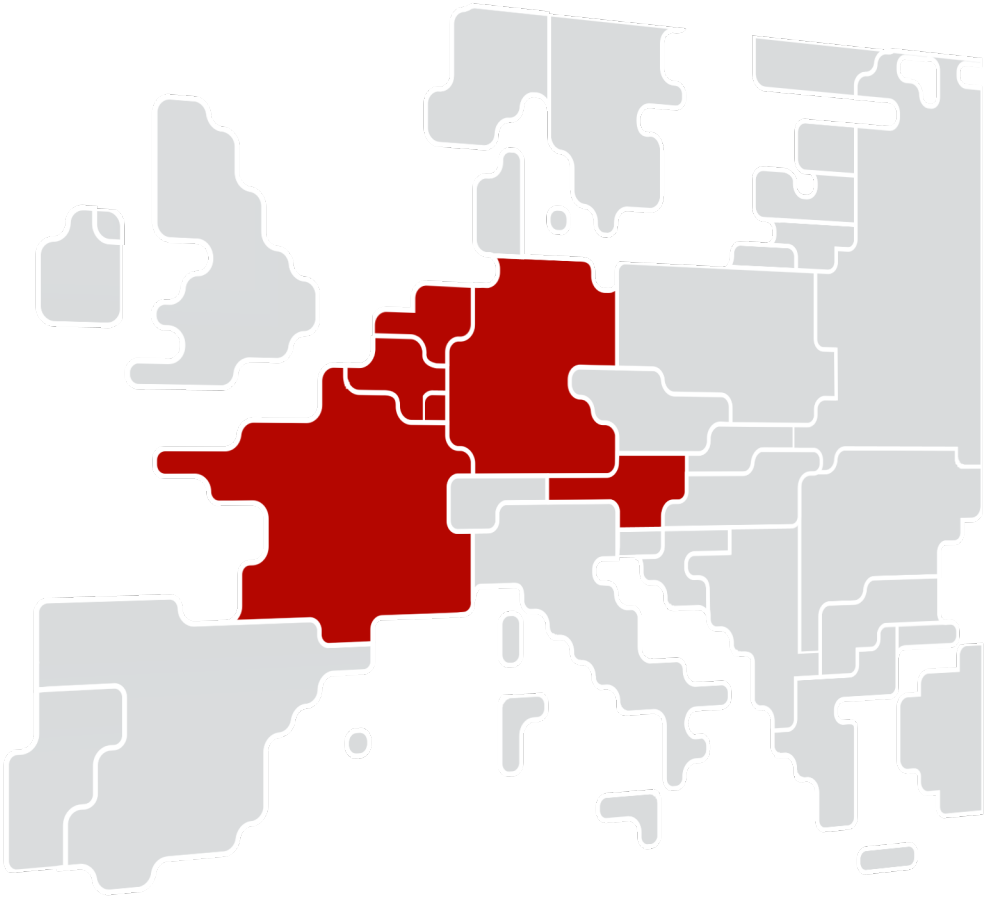
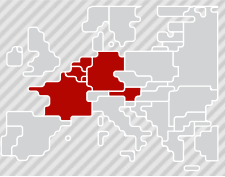
CWE Consultative Group





3. CWE CEP implementation

Introduction

Background

- Article 16(8) of the Regulation (EU) 2019/943, prescribes that TSOs shall not limit the volume of interconnection capacity to be made available to market participants as a means of solving congestion inside their own bidding zone, or as a means of managing flows resulting from transactions internal to bidding zones.
- The same article also defines that this requirement shall be considered to be complied with if a minimum level of available capacity for cross-zonal trade is reached. For borders using a flow-based approach, this level (the “70% requirement”) is set to 70% of the capacity respecting operational security limits of internal and cross-zonal critical network elements taking into account contingencies (i.e. CNECs / CBCOs).
- Transitory measures, such as action plans pursuant to Article 15 of the Regulation 2019/943 or derogations pursuant to Article 16(9) of the same regulation, allow a step-wise approach for reaching this minimum capacity ultimately by 31 December 2025.

Submitted derogations of CWE TSOs

- The following CWE TSOs submitted a derogation request from the 70% requirement: APG, Elia, RTE, and TTN
- The submitted derogations of CWE TSOs can be found in the package of submitted derogations from Core TSOs, which has been published on the ENTSO-E website: https://www.entsoe.eu/Documents/Network%20codes%20documents/Implementation/ccr/methodologies/core/cep/20191111_Core_derogations_common_V14.pdf
- Now it is up to the respective NRAs to decide on the derogation, after having consulted other affected NRAs of the affected CCRs. In case of disagreement among NRAs, the decision will be escalated to ACER.

Action plans

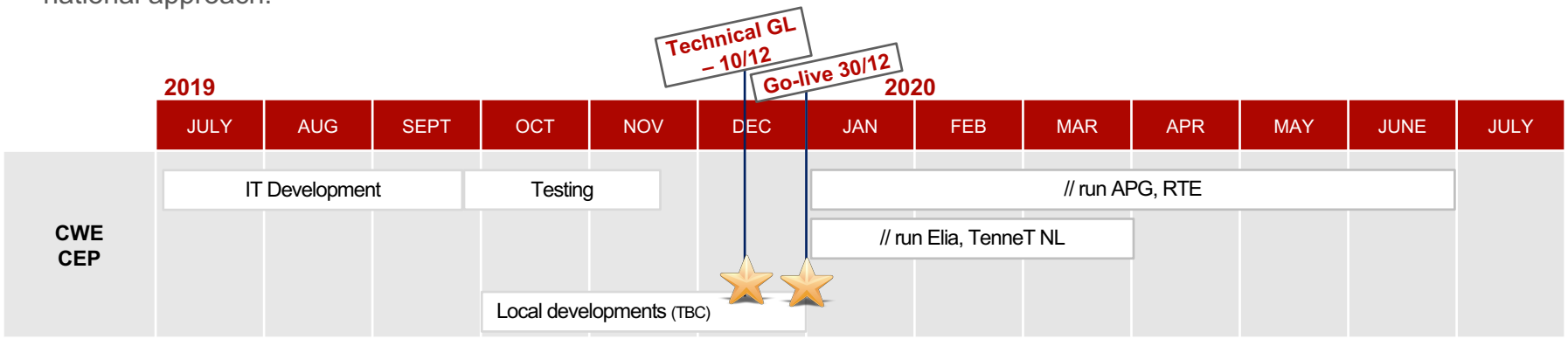
- For the following Member States, it is foreseen that action plans will be established: Germany, the Netherlands.

3. CWE CEP implementation

Current status

Current status on CEP implementation in CWE

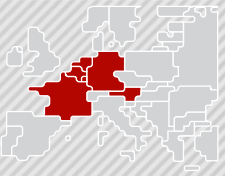
- CWE TSOs are preparing for 01/01/2020 with regards to Articles 16(8) and 16(9) of the Regulation (EU) 2019/943 (named as "CEP go live" or "CEP implementation" in the following)
- Due to different national approaches (derogation and/or national action plan) on the implementation of the 70% requirement, CEP implementation on CWE level (and elsewhere in Europe) is a complex process.
  - **TSOs of each member state will present today the local situation regarding CEP implementation**
- To enable local CEP compliancy as of 01/01/2020, CWE TSOs will implement a configurable minRAM per CNEC per hour within CWE FB CC. The exact minRAM values which will be applied by the individual CWE TSOs are dependent on the national approach.



Explanation scope of activities

- Technical go-live: 10/12/19 in D-2, 20% minRAM to be guaranteed (configurable)
- Go-live: 01/01/20 (BD, D-2 is 30/12)
  - For Amprion, Transnet BW, and TenneT DE – minRAM set to 20%* as it is currently implemented in CWE
  - Parallel run for APG, Elia, RTE, and Tennet NL. During // run, APG, Elia, RTE, and TenneT NL will keep configuration setting on 20%* minRAM.
- No additional changes are foreseen in the first three months after go-live on January 1st.

* Depending on operational security



3. CWE CEP implementation

Local information on CEP implementation – Belgium (Elia)

Derogation is requested on three foreseeable grounds

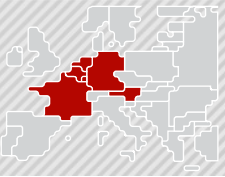
1. **Loop flows** above an acceptable level due to likely action plan(s) and absence of methodologies allowing to limit them (Core CCM, XB RD&CT and cost sharing) – Note: loop flows can be **as high as 70%** on some CNECs during some MTUs
2. **Expected lack of redispatching potential** to deal with weakened grid in case of **outage** situation (in Belgium: long duration outages for conductor replacement): redispatching potential will structurally not be sufficient to reach targeted minRAM due to lacking XB RD&CT methodologies
3. **Operational security risk** introduced:
   - By **new processes**: more extensive application of redispatching to offer higher capacities (no action plan!) – unknown extent at this stage due to unknown approach/extent in surrounding countries
   - By **new tools**: methodological derogation approach (see below) implies to develop new tools of which the testing is too limited before go-live, acknowledging late entry into force of CEP and ongoing discussions at EU, regional and national level

Approach

- **Methodological approach**: no value but principles and formulas - applied on a daily basis in the capacity calculation process, using the last available grid model => targeted impact, possibly void, in line with the requirements of having the extent of the derogation as limited as possible

  1. **Loop flows**: definition of an acceptable level of loop flows *LFaccept* and a calculated level of loop flows *LFcalc*
     - ➔ $minRAM = 70\% - max\left(0; LF_{calc} - LF_{accept}\right)$
  2. **Outages**: commitment to use redispatching to reach *minRAM* – if not possible reduce it and report to CREG if *minRAM* would have been reached without outages
  3. **New processes and new tools**: mitigated by an external // run for 3 months, also having some benefits in terms of foresight for the market

- **Extent:** all CNECs (but targeted impact thanks to methodological approach)
- **Duration:** derogation is requested for one year for #1 and #2, 3 months for #3



3. CWE CEP implementation

Local information on CEP implementation – France (RTE)

Main reason for derogation are the following

- At the date of 1st of January, **RTE is not able to guarantee operational security** within the requirements of the minimum level of Cross Zonal Capacity (70%) set in article 16(8) of CEP
- The limited amount of time between publication of CEP (June 2019) and applicability (1st January 2020), did not allow a sufficient period to finalize the development of new tools and the training phase of operators
- The **development of new processes and tools** aiming to offer higher capacities introduce additional risks to operational security
- **Uncertainties on situation of other countries** (Action Plan, derogation…) participating to the capacity calculation process

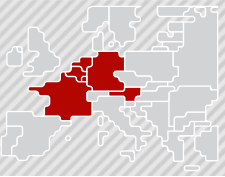
Derogation request

- **6-month period** to finalize the development and testing of new tools/gather relevant experience from processes
  - This 6-month period is seen as a **parallel run approach**

// Run content

- **Finalizing a monitoring tool to evaluate the margin** for cross-zonal trades for all the French CNECs as defined by ACER guidance
- **Testing new values** of cross zonal capacities on French CNEC and **ensure the availability** of Remedial Action to **guarantee the operational security**
- **Training operators** in order to gain enough experience with new processes and tools after the end of derogation

During this // run, a minimum margin on the French CNECs for cross-zonal trades within CWE region of 20% of the thermal limit of network element will be given **(20% MinRAM CWE)**



Local information on CEP implementation – Germany (50Hertz, Amprion, TransnetBW, TenneT GmbH)

Germany follows an Action Plan pursuant to Article 15 of Regulation 743/2019

In general:

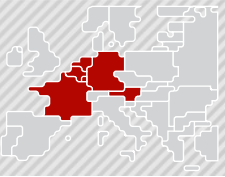
- Action Plan of German Ministry (BMWi) describes measures to tackle congestion and general principles for starting values.
- BNetzA has elaborated and will publish a more detailed methodology for determining starting values which shall be used by German TSOs.
- Starting values will be determined based on allocated capacity (historical data from 2016-2018) as foreseen in the legislation.
- Provided capacity will increase yearly following a linear trajectory from starting values on January 1st 2020 up to 70% until the end of 2025.
- For Core (CWE + PL/CZ) one average starting value is determined by German TSOs based on CNEs for CWE/Core following BNetzA´s guidance.

- **Additionally, 20% minRAM* in CWE will still apply and be made available as in operation in CWE today.**

Further Process:

- German Action Plan will be consulted by BMWi, on 10/12/2019 in Brussels, and via email until 11/12/2019.

* Depending on operational security



Local information on CEP implementation – Austria (APG)

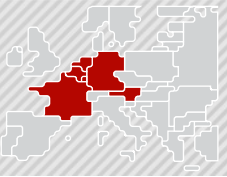
Derogation is requested on five foreseeable grounds

1. **Insufficient concepts and IT-Tools for capacity calculation and validation** (in line with the Regulation 2019/943) in the different capacity calculation areas
   - As APG is involved in different calculation areas, a sufficient validation tool which takes different borders into account is needed. An insufficient validation of the calculated (higher) capacities would impose major risk to operational security.
2. **Insufficient redispatch potential** to guarantee the 70% capacity criterion
3. Absence of consideration of **flows of 3rd countries** in the capacity calculation (as stipulated in the ACER recommendation)
   - The western part of the Austrian grid is highly impacted by those flows and therefore they cannot be artificially neglected
4. Current usage of **CNEC capacity > 30% by loop flows and PST flows** and lack of cross-CCR coordination
   - Currently there is no calculation of loop flows and its limitations implemented as this is foreseen in the Core CCM
5. **Uncertainties in the capacity calculation** process related to the **non-existence of a common coordinated forecast process** in Europe

Approach

1. **Development of new methods and tools for "CEP 70% calculation" and introduction of a validation process (CWE + NTC borders) followed by operator training.**
2. **APG will work on gaining access to additional RD potentials** in the neighbouring and non-neighbouring countries.
3. APG is actively involved in the Core CCR investigations and discussions on how to integrate 3rd countries in the relevant methodologies.

- Besides the concrete mitigations listed above, APG will take part on the // run to gain information and test first tools.
- APG continue to apply 20 % minRAM with 01.01.2020 in CWE
- **Extent of the Derogation:** all CWE CNECs and NTC borders
- **Duration of the Derogation :** the derogation is requested for one year



3. CWE CEP implementation

Local information on CEP implementation – Luxembourg (Creos)

No action plan [article 15]

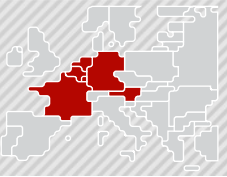
- No structural congestions identified on internal 220 kV lines

No derogation [article 16(9)]

- Currently no commercialized interconnections:
  - Germany : no congestion on 220 kV LU-DE lines, same bidding zone DE/LU
  - Belgium : assessement for IC BeDeLux done and shared with CWE NRAs

Luxemburgish grid (operated by Creos) is included in the CWE capacity calculation process and n-1 security assessment, but no critical network elements from Luxembourg included in the capacity calculation process to solve congestion or as a means of managing flows resulting from transactions internal to bidding zones.

Luxembourg is not limiting the volume of interconnection capacity to be made available to market participants, the requirements of article 16(8) cannot be applied.



Local information on CEP implementation – the Netherlands (TenneT TSO BV) 1-2

One Derogation is requested on three foreseeable grounds

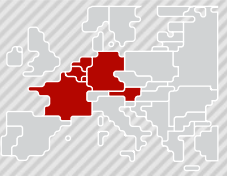
1. **Loop flows** above an acceptable level due to likely action plan(s) and absence of methodologies allowing to limit them (Core CCM, XB RD&CT and cost sharing)
2. **Expected lack of redispatching potential** to deal with weakened grid in case of **outage** situation redispatch potential may not be sufficient to reach targeted minRAM values due to lacking XB RD&CT methodologies
3. **Operational security risk** introduced:
   - By **new processes**: more extensive application of redispatch to offer higher capacities – unknown extent at this stage due to unknown approach/extent in surrounding countries
   - By **new tools**: methodological derogation approach (see below) implies to develop new tools for which both development and the testing cannot be performed before 1/1/2020, acknowledging late entry into force of CEP and ongoing discussions at EU, regional and national level

Approach

- **Methodological approach**: no value but principles and formulas - applied on a daily basis in the capacity calculation process, using the last available grid model => targeted impact, possibly void, in line with the requirements of having the extent of the derogation as limited as possible

1. **Loop flows**: definition of an acceptable level of loop flows *LFaccept* and a calculated level of loop flows *LFcalc*
   - $minRAM = [70\% \,|ACTION\ PLAN\ VALUE] - max\left(0; LF_{calc} - \ LF_{accept}\right)$
   - Note that 70% may be lowered in line with a defined linear trajectory in case of an established and implemented action plan
   - Also, note that a minimum RAM of 20% will be maintained in any case (irrespective of outcome of formula above).
2. **Outages**: commitment to use redisptach to reach *minRAM* – if not possible reduce RAM and report to ACM with justification
3. **New processes and new tools**: mitigated by a // run for 3 months to finalize the development and testing of new tools/gather relevant experience from processes. TenneT will report on implementation process and //run results to ACM

- **Extent:** all CNECs (but targeted impact thanks to methodological approach)
- **Duration:** derogation is requested for one year for #1 and #2, 3 months for #3



Local information on CEP implementation – the Netherlands (TenneT TSO BV) 2-2

Another Derogation is requested on the following foreseeable ground

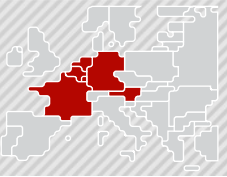
1. **If,** in case of approval of the submitted structural congestion report and a possible subsequent decision by the Dutch State to establish an action plan**, insufficient time is available to implement this action plan before 1 January 2020 .**
   There could be insufficient time for the following reasons:
   1. The short time between the publication of Regulation 2019/943 and Entry into Force of the 70% requirement
   2. Additional studies by TenneT are required on the future grid situation in order to provide the Dutch state with enough information to make an informed decision on the required actions in order to reach the 70% requirement by 31 December 2025
   3. The possible decision by the Dutch state to establish an action plan would lead to the undesired situation of entry into force of the 70% requirement before the action plan is established.

Approach

- A transition period will be applied in case the Dutch State decides to establish an action plan in accordance with Article 15 of Regulation 2019/943.
- During this transition period, TenneT will continue to apply the current approved methodology and practices in the CWE coordination area to the operational day-ahead capacity calculation process in CWE (i.e. minRAM of 20%).

- **Extent:** all CNECs
- **Duration:** derogation is requested from 1 January 2020, until the implementation date of the linear trajectory as defined by the establishment of an action plan.

General note: This derogation is only relevant in case the Dutch State does not establish an action plan before 1 January 2020.



3. CWE CEP implementation

CEP communication: go-live & publication of data

Given the complexity of CEP implementation due to local differences, CWE TSOs consider it important to communicate in a transparent manner to CWE MPs. The following communication on CEP implementation is foreseen:

Before technical go-live on 10/12:

- 03/12 CCG call: Overall update on CEP implementation and in addition, each country will present to MPs the local situation (national plan / derogation and whether or not TSO(s) will participate in the CEP // run) as of January 1st 2020
  - After the CCG call, meeting material will be posted on JAO message board to make the information available for all MPs.
- Market message announcing go live and changes to be expected
- Dedicated section on JAO website for CEP related communication

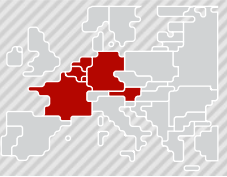
After 11/12/2019 (trading day):

- Publication of data via JAO utility tool (UT):
  - With TSOs implementing the configurable minRAM, diverging changes to publication to MPs via the JAO UT are also to be expected, also given the possibly diverging local compliance steps.
  - MinRAM factor will be published instead of information on MinRAM exclusion. If applicable, the justification for lower minRAM factors will be included in the UT as well.

➔ *See next slide for an example (screenshot) of the updated JAO UT*

3. CWE CEP implementation

CEP communication: go-live & publication of data



Communication on CEP implementation

- Example of update in JAO UT (screenshot):

Date: 2019-03-31 The data for 2019-03-31 has been retrieved successfully.

FileId	DeliveryDa	Perio	Row	OutageNam	EIC_Cod	CriticalBranchNam	EIC_Cod	Presolv	RemainingAvailableMargin (MW)	Fm	Fr	FR	F/	Al	MinRAMFact	MinRAMFactorJustificatio	BiddingAr a_Shortname	Facto	Bidd
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90	2019-03-31	1	65100	[BE-BE] Doel - 2	22T201705	[BE-BE] PST_ZANDV_2	22T201610	TRUE	1056	1508	218	256	0	-22	70	N/A	AT	-0,00837	BE
90	2019-03-31	1	68330	[BE-BE] Doel - 2	22T201705	[BE-BE] BDOEL 1 - BZ/	22T-BE-IN-I	TRUE	1326	1599	-2	275	0	0	70	N/A	AT	0,00874	BE
90	2019-03-31	1	65159	[BE-BE] Maasbr	10T-BE-NL-	[BE-BE] BGRAMM1 - B/	22T-BE-IN-I	TRUE	1027	1468	436	166	0	-161	70	N/A	AT	-0,01628	BE
90	2019-03-31	1	60143	[BE-BE] Auban	10T-BE-FR-	[BE-FR] BAUBAN2 - XA	10T-BE-FR-	TRUE	366	523	186	73	0	-102	70	test	AT	-0,00795	BE
90	2019-03-31	1	63738	[BE-BE] Auban	10T-BE-FR-	[BE-FR] XAU_M.21 - BA	10T-BE-FR-	TRUE	643	523	-186	66	0	0	70	test	AT	0,00795	BE
90	2019-03-31	1	60571	[BE-BE] Auban	10T-BE-FR-	[BE-BE] BGRAMM1 - B/	22T-BE-IN-I	TRUE	1028	1468	456	166	0	-182	70	N/A	AT	-0,02056	BE
90	2019-03-31	1	63148	[BE-BE] Geertru	10T-BE-NL-	[BE-BE] BGRAMM1 - B/	22T-BE-IN-I	TRUE	1028	1468	453	166	0	-179	70	N/A	AT	-0,01960	BE
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90	2019-03-31	1	61048	BASECASE	N/A	[BE-NL] XZA_GT11 - BA	10T-BE-NL-	FALSE	18351048	####	-100	0	0	0	70	N/A	AT	-0,00678	BE
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90	2019-03-31	1	66832	BASECASE	N/A	[BE-BE] BDOEL 1 - BM	22T-BE-IN-I	FALSE	1028	1468	701	68	0	-329	70	N/A	AT	-0,00239	BE
90	2019-03-31	1	64505	BASECASE	N/A	[BE-BE] BDOEL 1 - BM	22T-BE-IN-I	FALSE	1028	1468	701	73	0	-334	70	N/A	AT	-0,00239	BE
90	2019-03-31	1	65183	BASECASE	N/A	[BE-BE] BDOEL 1 - BM	22T-BE-IN-I	FALSE	1123	1605	767	79	0	-364	70	N/A	AT	-0,00262	BE
90	2019-03-31	1	65937	BASECASE	N/A	[BE-BE] BSTAM+1 - BC	22T-BE-IN-I	FALSE	1640	1496	-283	139	0	0	70	N/A	AT	-0,00583	BE
90	2019-03-31	1	62601	BASECASE	N/A	[BE-BE] BCHAMP1 - BC	22T-BE-IN-I	FALSE	1706	1605	-243	142	0	0	70	N/A	AT	-0,00517	BE
90	2019-03-31	1	64466	BASECASE	N/A	[BE-BE] BCOURC1 - BC	22T-BE-IN-I	FALSE	1679	1605	-204	130	0	0	70	N/A	AT	-0,00517	BE
90	2019-03-31	1	60291	BASECASE	N/A	[BE-FR] XAC_LO11 - BA	10T-BE-FR-	FALSE	1809	1599	-400	190	0	0	70	N/A	AT	0,02011	BE
90	2019-03-31	1	66995	BASECASE	N/A	[BE-NL] BZANDV1 - XZ	10T-BE-NL-	FALSE	18350848	####	100	0	0	0	70	N/A	AT	0,00678	BE

Net Position | Allocated Capacities | Price Spread | Intraday ATC | Congestion Income | D2CF | Refprog | Final Flowbased domain | Intraday Implicit Allocation | +